# Unit 2 Practice Questions - ALL

**1.** The demand curve for a normal good slopes down for which of the following reasons?

I. An increase in the price of the good induces consumers to purchase substitute products.

II. An increase in the price of the goods reduces consumers' purchasing power.

III. An increase in the price of the good increases consumers' utility from consuming that good.

(A) I only
(B) II only
(C) III only
(D) I and II only ✓
(E) I and III only

**2.** According to the law of demand, an increase in the price of grape juice will result in
(A) a rightward shift in the demand curve for grape juice
(B) a leftward shift in the demand curve for grape juice
(C) a decrease in the demand for orange juice, a substitute
(D) a decrease in the quantity of grape juice demanded ✓
(E) an increase in the quantity of grape juice supplied

**3.** A change in which of the following will cause a change in the supply of personal computers (PC's) in the short run?
(A) Technology ✓
(B) Demand for PC's
(C) Price of disks, which are a complement to PC's
(D) Price of PC's
(E) Consumers' incomes

**4.** An air-conditioning unit is a normal good. Which of the following would cause an increase in the equilibrium price and equilibrium quantity of air-conditioning units in the short run?
(A) Consumers expect a greater increase in the future price of air-conditioning units. ✓
(B) Producers expect a greater increase in the future price of air-conditioning units.
(C) The price of air filters, an input in producing air-conditioning units, increases.
(D) The price of fans, a substitute in consumption, decreases.
(E) Consumers' incomes decrease.

**Answer A**

Correct. When consumers expect a greater increase in the future price of air-conditioning units, a normal good, they will be incentivized to purchase air-conditioning units, causing demand to increase, which increases the equilibrium price and equilibrium quantity in the short run.

**5.** A leftward shift in the supply curve of watches could be caused by
(A) an increase in the price of watches
(B) an increase in wages paid to workers who produce watches ✓
(C) an improvement in the technology associated with watchmaking
(D) a decrease in the price of parts used in the production of watches
(E) an increase in population

**6.** All of the following cause a rightward shift in the demand schedule for a normal good EXCEPT
(A) a decrease in the price of the good ✓
(B) a decrease in the price of a complementary good
(C) an increase in the price of a substitute good
(D) an increase in consumers' income
(E) an increase in consumers' preference for the good

# Unit 2 Practice Questions - ALL

**7.** An increase in the supply of coffee could be caused by

(A) a decrease in the price of cream, which is a complement to coffee

(B) a decrease in the cost of labor used to produce coffee ✓

(C) an increase in consumer income

(D) an increase in the demand for coffee

(E) an increase in the price of coffee

**8.** A decrease in the demand for antique lanterns, a normal good, would be caused by which of the following?

(A) An increase in consumers' incomes

(B) An increase in the price of antique lanterns

(C) An increase in the expected price of antique lanterns in the future

(D) An increase in the price of electric lanterns, a substitute good

(E) An increase in the price of lamp oil, a complementary good ✓

**Answer E**

Correct. An increase in the price of a complement in consumption (lamp oil) will decrease demand for antique lanterns.

# Unit 2 Practice Questions - ALL

**9.** *Assume soybeans are produced by a perfectly competitive, constant-cost industry. Fresh Farm is a typical firm producing soybeans and is currently operating with an economic loss.*

a. *Using a correctly labeled graph for Fresh Farm, show each of the following in the short run.*

i. *The marginal cost curve and average total cost, labeled MC and ATC, respectively*

ii. Fresh Farm's price and loss-minimizing quantity, labeled $P_F$ and $Q_F$, respectively

iii. The average variable cost curve, labeled AVC

b. Suppose that newspapers have recently reported that excessive soybean consumption can cause health problems. As a result, will the new loss-minimizing quantity for Fresh Farm be greater than, less than, or equal to $Q_F$ in the short run? Explain.

c. Is the long-run market supply for soybeans perfectly inelastic, relatively inelastic, unit elastic, relatively elastic, or perfectly elastic?

d. Assume now that the soybean market is in a long-run equilibrium and that fertilizers used in soybean production cause water pollution. Using a correctly labeled graph for the soybean market, show each of the following.

I. Market equilibrium quantity and price, labeled $Q_M$ and $P_M$

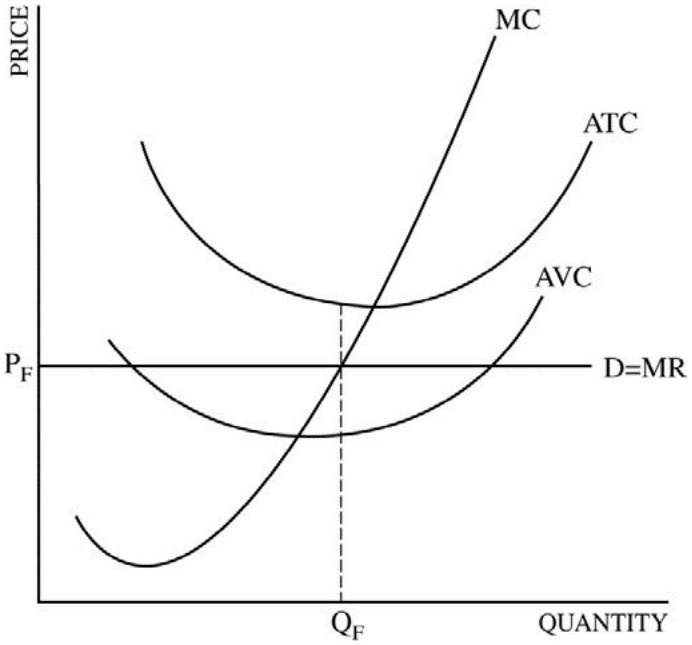
II. Marginal social cost curve, labeled MSC

III. Socially optimal quantity, labeled $Q_S$

IV. The area representing deadweight loss, shaded completely

Respond to all parts of the question.

**Part A**



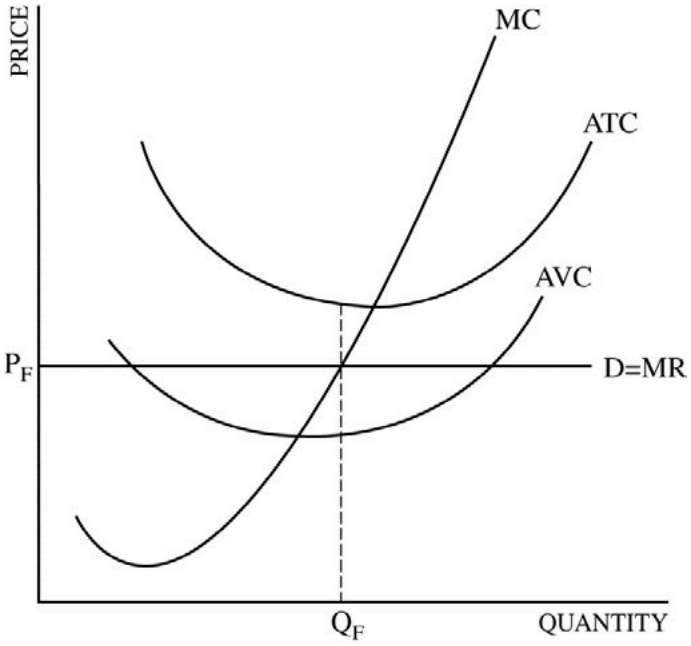

4 points:

- One point is earned for showing an upward sloping MC curve going through the minimum point of the ATC curve.
- One point is earned for a correctly labeled graph of the typical firm, Fresh Farm, with a horizontal demand curve below ATC, showing $P_F$.
- One point is earned for showing the profit-maximizing quantity, QF at MC=MR or MC=P if P is horizontal.
- One point is earned for showing the AVC curve below the price line at $Q_F$.

| 0 | 1 | 2 | 3 | 4 ✓ |
|---|---|---|---|---|

Student receives 4/4 point(s)

# Unit 2 Practice Questions - ALL




4 points:

- One point is earned for showing an upward sloping MC curve going through the minimum point of the ATC curve.
- One point is earned for a correctly labeled graph of the typical firm, Fresh Farm, with a horizontal demand curve below ATC, showing $P_F$.
- One point is earned for showing the profit-maximizing quantity, QF at MC=MR or MC=P if P is horizontal.
- One point is earned for showing the AVC curve below the price line at $Q_F$.

**Part B**

1 point:

- One point is earned for stating that the new quantity will be less than $Q_F$, since demand decreases or price decreases.

| 0 | 1 ✓ |
|---|---|

Student receives 1/1 point(s)

1 point:

- One point is earned for stating that the new quantity will be less than $Q_F$, since demand decreases or price decreases.

**Part C**

1 point:

- One point is earned for stating that the long-run market supply for soybeans is perfectly elastic.

| 0 | 1 ✓ |
|---|---|

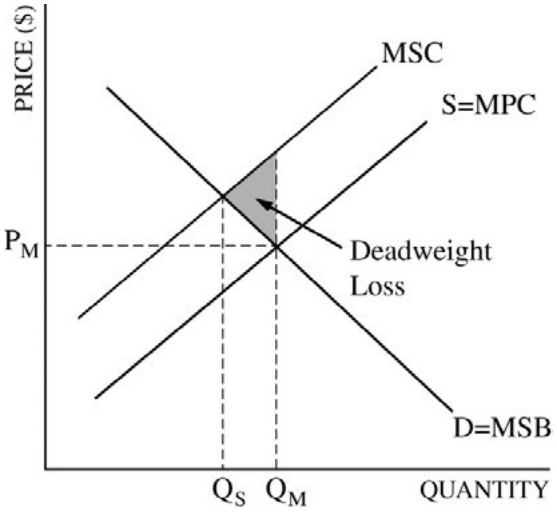
Student receives 1/1 point(s)

1 point:

- One point is earned for stating that the long-run market supply for soybeans is perfectly elastic.

**Part D**

# Unit 2 Practice Questions - ALL

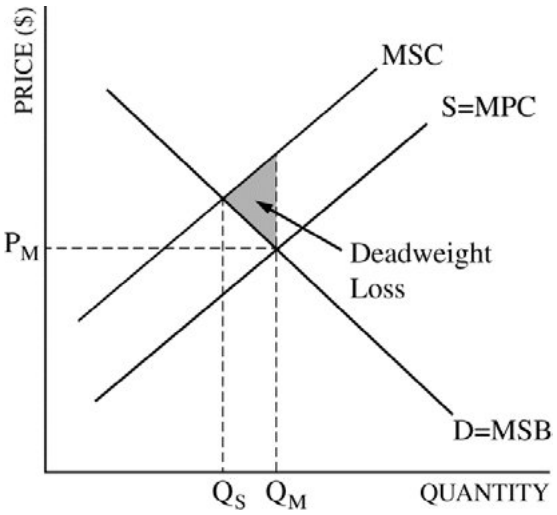



4 points:

- One point is earned for drawing a correctly labeled graph for the soybean market showing a downward sloping demand curve (or MSB), supply curve (or MPC), equilibrium quantity, $Q_M$, and price, $P_M$.
- One point is earned for drawing the marginal social cost curve above the supply curve.
- One point is earned for showing the socially optimal quantity, QS, at MSB=MSC or D=MSC.
- One point is earned for showing the area representing the deadweight loss, shaded completely.

| 0 | 1 | 2 | 3 | 4 ✓ |
|---|---|---|---|---|

Student receives 4/4 point(s)




4 points:

- One point is earned for drawing a correctly labeled graph for the soybean market showing a downward sloping demand curve (or MSB), supply curve (or MPC), equilibrium quantity, $Q_M$, and price, $P_M$.
- One point is earned for drawing the marginal social cost curve above the supply curve.
- One point is earned for showing the socially optimal quantity, QS, at MSB=MSC or D=MSC.
- One point is earned for showing the area representing the deadweight loss, shaded completely.

# Unit 2 Practice Questions - ALL

**10.** Assume that apple juice and grape juice are substitutes. Which of the following will cause an increase in the quantity of apple juice supplied?

(A) A decrease in subsidies to apple juice producers
(B) A decrease in the price of grape juice
(C) An increase in the price of apple juice ✓
(D) An increase in the price of insecticides used on apple trees
(E) The imposition of a price ceiling in the market for apple juice

**11.** Assume that consumers consider popcorn and pretzels to be substitutes. A significant decrease in the supply of popcorn will affect the pretzel market by

(A) increasing the demand for pretzels and therefore the supply of pretzels
(B) increasing the demand for pretzels and therefore the price of pretzels ✓
(C) decreasing the demand for pretzels and therefore the price of pretzels
(D) increasing the supply of pretzels and therefore the price of pretzels
(E) decreasing the supply of pretzels and therefore the price of pretzels

**12.** Assume that consumers consider potatoes to be an inferior good, but consider rice to be a normal good. An increase in consumers' incomes will most likely affect the equilibrium price and quantity of potatoes and rice in which of the following ways?

(A) ✓

| **Potatoes** | | **Rice** | |
|---|---|---|---|
| *Price* | *Quantity* | *Price* | *Quantity* |
| Decrease | Decrease | Increase | Increase |

(B)

| **Potatoes** | | **Rice** | |
|---|---|---|---|
| *Price* | *Quantity* | *Price* | *Quantity* |
| Decrease | Increase | Increase | Decrease |

(C)

| **Potatoes** | | **Rice** | |
|---|---|---|---|
| *Price* | *Quantity* | *Price* | *Quantity* |
| Decrease | Decrease | Decrease | Decrease |

(D)

| **Potatoes** | | **Rice** | |
|---|---|---|---|
| *Price* | *Quantity* | *Price* | *Quantity* |
| Increase | Increase | Decrease | Decrease |

(E)

| **Potatoes** | | **Rice** | |
|---|---|---|---|
| *Price* | *Quantity* | *Price* | *Quantity* |
| Increase | Decrease | Increase | Decrease |

**13.** Assume that good X is a normal good. Which of the following helps to explain why a decrease in the price of good X increases the quantity demanded of good X?

(A) Good X becomes relatively less expensive than its substitutes, so consumers buy more of good X and fewer of the substitutes ✓
(B) The marginal utility of consuming good X increases as more of good X is consumed.
(C) The lower price of good X decreases the marginal utility per dollar; therefore, consumers buy more of good X.
(D) The demand curve for good X shifts to the left.
(E) The supply curve for good X shifts to the right.

# Unit 2 Practice Questions - ALL

**14.** Assume that ice cream is a normal good. If the price of ice cream decreases, the substitution effect and the income effect will lead to which of the following changes in ice cream consumption?

(A)

| Substitution Effect | Income Effect |
|---|---|
| Increase | Decrease |

(B) ✓

| Substitution Effect | Income Effect |
|---|---|
| Increase | Increase |

(C)

| Substitution Effect | Income Effect |
|---|---|
| Increase | No change |

(D)

| Substitution Effect | Income Effect |
|---|---|
| Decrease | Increase |

(E)

| Substitution Effect | Income Effect |
|---|---|
| Decrease | No change |

**15.** Assume that people like onions on their hamburgers. If the supply of hamburgers decreases, the demand for onions will most likely

(A) remain unchanged because hamburgers and onions are different goods
(B) increase because hamburgers and onions are substitutes
(C) increase because hamburgers and onions are complements
(D) decrease because hamburgers and onions are complements ✓
(E) decrease because hamburgers and onions are substitutes

# Unit 2 Practice Questions - ALL

**16.** *In answering the question, you should emphasize the line of reasoning that generated your results; it is not enough to list the results of your analysis. Include correctly labeled diagrams, if useful or required, in explaining your answers. A correctly labeled diagram must have all axes and curves clearly labeled and must show directional changes.*

*Bestmilk, a typical profit-maximizing dairy firm, is operating in a constant-cost, perfectly competitive industry that is in long-run equilibrium.*

a. *Draw correctly labeled side-by-*side graphs for the dairy market and for Bestmilk and show each of the following.

i. Price and output for the industry

ii. Price and output for Bestmilk

b. Assume that milk is a normal good and that consumer income falls. Assume that Bestmilk continues to produce. On your graphs in part (a), show the effect of the decrease in income on each of the following in the short run.

i. Price and output for the industry

ii. Price and output for Bestmilk

iii. Area of loss or profit for Bestmilk

c. Following the decrease in consumer income, what must be true for Bestmilk to continue to produce in the short run?

d. Assume that the industry adjusts to a new long-run equilibrium. Compare the following between the initial and the new long-run equilibrium.

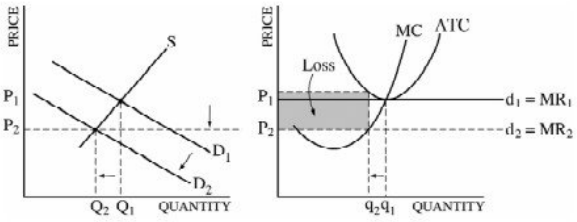
i. Price in the industry

ii. Output of a typical firm

iii. The number of firms in the dairy industry

Respond to all parts of the question.

**Part A**

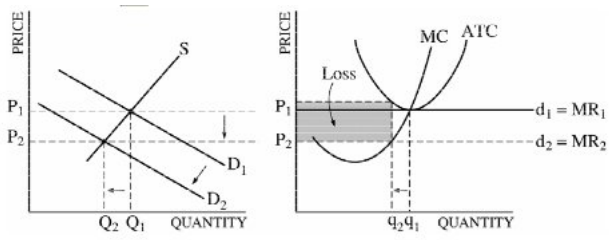



**4 Points**

- One point is earned for a correctly labeled market graph of the dairy industry.
- One point is earned for correctly labeled equilibrium industry price and quantity.
- One point is earned for drawing a horizontal demand curve for Bestmilk at the market price.
- One point is earned for showing the equilibrium quantity for Bestmilk where price equals marginal cost and the minimum of average total cost (P = MC = ATC).

| 0 | 1 | 2 | 3 | 4 ✓ |
|---|---|---|---|---|

The student earns all of the following points:




- One point is earned for a correctly labeled market graph of the dairy industry.

# Unit 2 Practice Questions - ALL

- One point is earned for correctly labeled equilibrium industry price and quantity.
- One point is earned for drawing a horizontal demand curve for Bestmilk at the market price.
- One point is earned for showing the equilibrium quantity for Bestmilk where price equals marginal cost and the minimum of average total cost (P = MC = ATC).

**Part B**

**4 points maximum**

- One point is earned for showing a decrease in market demand.
- One point is earned for showing a decrease in equilibrium market price and quantity.
- One point is earned for showing the change to a new lower profit-maximizing price and quantity for Bestmilk.
- One point is earned for shading the area of loss for Bestmilk.

| 0 | 1 | 2 | 3 | 4 ✓ |
|---|---|---|---|---|

The student earns all of the following points:

**4 points maximum**

- One point is earned for showing a decrease in market demand.
- One point is earned for showing a decrease in equilibrium market price and quantity.
- One point is earned for showing the change to a new lower profit-maximizing price and quantity for Bestmilk.
- One point is earned for shading the area of loss for Bestmilk.

**Part C**

**1 Point**

- One point is earned for stating that P>/=AVC, or TR>/=TVC, or P>AVC, or TR>TVC, or losses are less than total fixed cost.

| 0 | 1 ✓ |
|---|---|

The student earns all of the following points:

**1 point maximum**

- One point is earned for stating that P>/=AVC, or TR>/=TVC, or P>AVC, or TR>TVC, or losses are less than total fixed cost.

**Part D**

**3 Points maximum**

- One point is earned for stating that industry price returns to the original long-run equilibrium price.
- One point is earned for stating that the output of a typical fi rm returns to the original profit-maximizing quantity.
- One point is earned for stating that there is a decrease in the number of firms.

| 0 | 1 | 2 | 3 ✓ |
|---|---|---|---|

The student earns all of the following points:

**3 points maximum**

- One point is earned for stating that industry price returns to the original long-run equilibrium price.
- One point is earned for stating that the output of a typical fi rm returns to the original profit-maximizing quantity.

# Unit 2 Practice Questions - ALL

- One point is earned for stating that there is a decrease in the number of firms.

**17.** Which of the following is necessary in a well-functioning capitalist economy but not in a command economy?

(A) Centralized decision making
(B) Scarcity of resources
(C) Monopolies
(D) Protection of property rights ✓
(E) Positive externalities

**18.** Carmen consumes both entertainment and medical care. For Carmen, entertainment is a normal good, and the income elasticity of her demand for medical care is zero.

If Carmen's income increases, which of the following will be the immediate impact on her consumption?

(A) Entertainment: Increase; Medical care: Increase

| Entertainment | Medical care |
|---|---|
| Increase | Increase |

(B) ✓

| Entertainment | Medical care |
|---|---|
| Increase | No change |

(C)

| Entertainment | Medical care |
|---|---|
| No change | Increase |

(D)

| Entertainment | Medical care |
|---|---|
| Increase | Decrease |

(E)

| Entertainment | Medical care |
|---|---|
| Decrease | Increase |

**19.** Which of the following situations best illustrates the law of demand?

(A) As real incomes of United States citizens have decreased over the past year, the demand for housing has also decreased.
(B) Recent decreases in the price of imported wine have led to an increase in the consumption of domestic wine.
(C) In the past several months, as the price of compact disc players has decreased, the quantity of compact disc players sold has increased ✓
(D) The increase in the price of quality health foods has increased the revenues of firms producing these goods.
(E) As the demand for computers has increased, the number of workers in the computer industry has increased.

**20.** Which of the following will cause the demand for a normal good to increase?

(A) A decrease in consumers' income
(B) A decrease in the price of a complementary good ✓
(C) A decrease in the price of a substitute good
(D) A decrease in the price of the good
(E) A decrease in the number of consumers

**Answer B**

Correct. A decrease in the price of a complementary good will lead to an increase in demand for the normal good. When goods are complements of each other, this means that the goods are often used together, and therefore consumption of one good tends to enhance consumption of the other.

# Unit 2 Practice Questions - ALL

**21.** In a perfectly competitive market, a change in which of the following could cause a shift in the supply curve?

(A) The incomes of consumers
(B) The number of buyers
(C) Technology ✓
(D) The price of the product
(E) Tastes and preferences

**22.** Suppose hot dogs and hamburgers are substitutes in consumption. If the supply of hot dogs decreases, which of the following will happen in the market for hamburgers?

(A) The supply curve for hamburgers will shift to the right.
(B) The supply curve for hamburgers will shift to the left.
(C) The demand curve for hamburgers will shift to the right. ✓
(D) The demand curve for hamburgers will shift to the left.
(E) Both the demand curve and supply curve for hamburgers will shift to the left.

**Answer C**

Correct. A decrease in the supply of hot dogs increases the price of hot dogs which increases the demand for hamburgers, a substitute in consumption for hotdogs. Therefore, the demand curve for hamburgers shifts to the right.

**23.** Which of the following will shift the supply curve for apples to the right?

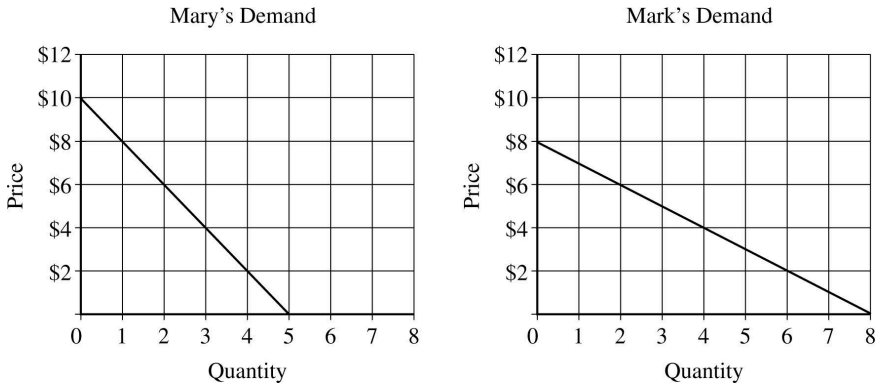
(A) An increase in consumers' income
(B) An increase in the price of apples
(C) An increase in the wages of apple pickers
(D) A decrease in the rental price for apple harvesting equipment ✓
(E) A decrease in the demand for oranges, a substitute in consumption

**Answer D**

Correct. A decrease in the rental price for apple harvesting equipment will increase the productivity of workers and lower the cost of production, causing the supply curve for apples to shift to the right.

# Unit 2 Practice Questions - ALL

**24.**




The graphs above show Mary's demand for hamburgers and Mark's demand for hamburgers. Suppose Mary and Mark are the only two consumers in the market. Which of the following is a point on the market demand curve for hamburgers?

(A)

| Price | Quantity |
|---|---|
| $2 | 12 |

(B) ✓

| Price | Quantity |
|---|---|
| $4 | 7 |

(C)

| Price | Quantity |
|---|---|
| $6 | 6 |

(D)

| Price | Quantity |
|---|---|
| $8 | 4 |

(E)

| Price | Quantity |
|---|---|
| $10 | 8 |

**25.** In the short run, a decrease in production costs of a product will shift

(A) both the demand curve and the supply curve to the right
(B) the demand curve to the left and the supply curve to the right
(C) only the supply curve to the right ✓
(D) only the supply curve to the left
(E) only the demand curve to the left

**26.** If the increase in the price of one good decreases the demand for another, then the two goods are

(A) inferior goods
(B) luxury goods
(C) normal goods
(D) substitute goods
(E) complementary goods ✓

# Unit 2 Practice Questions - ALL

**27.** Ice cream is a normal good. Ice cream and hot fudge are complementary goods, while ice cream and gelato are substitute goods. Which of the following could lead to an increase in the equilibrium price and an indeterminate change in the equilibrium quantity of ice cream?

(A) Consumer incomes rise, and the price of hot fudge increases.

(B) Bacteria in ice cream facilities leads to a number of consumers being hospitalized, and increased dairy production leads to lower input costs for ice cream.

(C) The price of gelato increases, and new technology increases efficiency of ice cream production.

(D) A new study indicates that ice cream is associated with improved bone health, and a leading ice cream producer declares bankruptcy. ✓

(E) A newly popular diet includes avoiding dairy products, and the government begins to subsidize ice cream production.

**Answer D**

Correct. A study indicating that ice cream can improve bone health would increase demand for ice cream, causing an increase in the equilibrium price and quantity of ice cream. The bankruptcy of a leading ice cream producer would decrease the supply of ice cream, causing an increase in the equilibrium price and a decrease in the equilibrium quantity of ice cream. Both changes would cause an increase in the equilibrium price of ice cream and an indeterminate effect on the equilibrium quantity of ice cream.

# Unit 2 Practice Questions - ALL

**28.** Respond to all parts of the question.

Include correctly labeled diagrams, if useful or required, in explaining your answers. A correctly labeled diagram must have all axes and curves clearly labeled and must show directional changes. If the question prompts you to "Calculate," you must show how you arrived at your final answer.

A movie theater company obtains the following estimated elasticities of demand.

- The absolute value of the short-run price elasticity of demand for movie tickets is $0.85$.
- The absolute value of the long-run price elasticity of demand for movie tickets is $3.2$.
- The cross-price elasticity of demand for good X, another product sold by the theater, with respect to the price of movie tickets is $-0.26$.
- The income elasticity of demand for movie tickets is $0.75$.

Answer each of the following by referring to the given elasticities.

(a) If the theater raises movie ticket prices by $10$ percent, by what percentage and in what direction will the quantity demanded for movie tickets change in the short run?

(b) Explain why the short-run price elasticity of demand for movie tickets differs from the long-run price elasticity of demand for movie tickets.

(c) What will happen to total revenue from movie ticket sales in the long run if movie ticket prices increase? Explain using the relative percentage changes in price and quantity.

(d) Are movie tickets a normal good or an inferior good? Explain.

(e) Given the increase in the price of movie tickets in part (a), what would be the impact on the demand for good X? Use the appropriate graph for good X to illustrate your answer.

**Part A**

Select a point value to view scoring criteria, solutions, and/or examples and to score the response.

| 0 | ✓ 1 |
|---|---|

The response states that the quantity demanded will decrease by 8.5%.

**Part B**

Select a point value to view scoring criteria, solutions, and/or examples and to score the response.

| 0 | ✓ 1 |
|---|---|

The response explains that consumers have more substitutes for the good in the long run that are not available in the short run or there is more time to adjust in the long run.

**Part C**

Select a point value to view scoring criteria, solutions, and/or examples and to score the response.

| 0 | ✓ 1 |
|---|---|

The response states that total revenue will decrease, and explains that demand is more elastic in the long run ($3.2 > 1$) so the percentage decrease in quantity will be larger than the percentage increase in price.

**Part D**

Select a point value to view scoring criteria, solutions, and/or examples and to score the response.

| 0 | ✓ 1 |
|---|---|

The response states that movie tickets are a normal good and explains that a normal good is a good with a positive income elasticity of demand ($0.75 > 0$).

**Part E**

Select a point value to view scoring criteria, solutions, and/or examples and to score the response.

# Unit 2 Practice Questions - ALL

| 0 | 1 ✓ |
|---|---|

The response includes a correctly labeled graph showing a leftward shift of the demand curve (see below).

Solution:



**29.** Which of the following would shift the short-run supply curve for strawberries?

(A) A decrease in the consumption of strawberries
(B) An increase in the price of strawberries
(C) A strike by all farmworkers ✓
(D) An increase in household incomes
(E) An announcement of a study that shows the health benefits of eating strawberries

**30.** For an inferior good, an increase in consumer income will cause

(A) the demand curve to shift to the left ✓
(B) the demand curve to shift to the right
(C) the short-run supply curve to shift to the right
(D) the long-run supply curve to shift to the right
(E) new firms to enter the market in the long run

**31.** For a normal good, the income effect of a price change refers to the change in the consumption of the good that occurs because of the change in

(A) consumers' purchasing power ✓
(B) the demand for a substitute good
(C) the supply of the good
(D) relative price
(E) marginal utility

# Unit 2 Practice Questions - ALL

**32.** The supply curve for automobiles will shift to the left in response to

(A) an increase in the efficiency of robot technology
(B) an increse in wages in the automobile industry ✓
(C) a decrease in the number of consumers purchasing automobiles
(D) a decrease in the interest rates for automobile loans
(E) a decrease in consumers' income

**33.** If bologna is an inferior good, which of the following must be true?

(A) The demand curve for bologna is vertical.
(B) The demand curve for bologna is horizontal.
(C) An increase in the price of bologna will decrease the supply of bologna.
(D) An increase in consumer income will decrease the demand of bologna. ✓
(E) A decrease in consumer income will decrease the supply of bologna.

**34.** If the demand for good Y increases as the price of good X decreases, it can be concluded that

(A) X and Y are substitute goods
(B) X and Y are complementary goods ✓
(C) X is an inferior good and Y is a superior good
(D) X is a superior good and Y is an inferior good
(E) both X and Y are inferior goods

**35.** If the demand for potatoes increases whenever a person's income increases, then potatoes are an example of

(A) an inferior good
(B) a free good
(C) a Giffen good
(D) a normal good ✓
(E) a public good

**36.** If the government imposes a tax on the production of cars, which of the following will occur in the market for cars?

(A) There will be a movement to the right along the supply curve.
(B) There will be a movement to the right along the demand curve.
(C) The supply curve will shift to the right.
(D) The supply curve will shift to the left. ✓
(E) The demand curve will shift to the right.

**37.** The income and substitution effects explain which of the following?

(A) Decreasing marginal productivity of labor
(B) Market power caused by barriers to entry
(C) Increasing marginal cost of production
(D) Increasing returns to scale
(E) The downward slope of the market demand curve ✓

**Answer E**

Correct. The downward slope of the market demand curve indicates that the lower the price of a product, all else equal, the higher the quantity demanded. When the price of a good decreases, the substitution effect incentivizes a consumer to buy more of the good and less of its substitute; furthermore, as the price of a good decreases, consumers' real income increases, incentivizing the consumer to buy more of the good. The income and substitution effects, therefore, explain the change in the quantity demanded as the price of a good changes.

# Unit 2 Practice Questions - ALL

**38.** Which of the following correctly describes the income effect associated with the law of demand?

(A) If consumer income increases, there will be an upward movement along the demand curve for a normal good.
(B) If consumer income increases, the demand curve will shift to the right for an inferior good.
(C) If the price of a good increases, the demand for the good decreases because the demand for its substitute in consumption increases.
(D) If the price of a good decreases, the demand for the good increases because the lower price increases the demand for its complement in consumption.
(E) If the price of a normal good decreases, the purchasing power of a consumer's income increases and therefore consumers will be willing and able to purchase more of the good. ✓

**Answer E**

Correct. The price decrease of a normal good increases the purchasing power of consumer income and allows the consumer to buy more of the good.

**39.** Which of the following helps explain why the demand curve for a normal good is downward sloping?

(A) The income and substitution effects move the quantity demanded in the same direction. ✓
(B) The income effect moves the quantity demanded in the opposite direction of the substitution effect.
(C) The income effect dominates the substitution effect.
(D) The substitution effect dominates the income effect.
(E) With an increase in income, the consumer decreases consumption of the good.

**40.** Which of the following will increase the demand for pizza, a normal good?

(A) An increase in the cost of producing pizza
(B) A decrease in the price of pizza
(C) An increase in the price of a complementary product
(D) An increase in consumers' income ✓
(E) An increase in the number of restaurants selling pizza

**41.** Which of the following will cause the supply curve for shoes to shift to the right?

(A) An increase in the price of socks, assuming that shoes and socks are complements
(B) A decrease in the price of sandals, assuming that shoes and sandals are substitutes
(C) An increase in the wages of shoe workers
(D) An increase in the number of firms producing shoes ✓
(E) A decrease in the income of consumers, assuming that shoes are normal goods

**42.** Which of the following will decrease the demand for beef?

(A) An increase in the price of pork, if pork and beef are substitute goods
(B) An increase in the price of potatoes, if potatoes and beef are complementary goods ✓
(C) A decrease in the cost of transporting beef to consumers
(D) An increase in the income levels of most consumers, if beef is a normal good
(E) Research showing beef is better for your health than chicken

**43.** Which of the following will cause the demand curve for good X to shift to the right?

(A) An increase in the price of good Z, a complement to good X
(B) An increase in the price of good Y, a substitute for good X ✓
(C) An increase in the consumer's income, if good X is an inferior good
(D) A decrease in the price of good X
(E) An increase in the supply of good X

# Unit 2 Practice Questions - ALL

**44.** Which of the following would cause an increase in the supply of tacos in the short run?

(A) The price of tacos decreases.

(B) The demand for tacos increases.

(C) The price of beef, an input in the production of tacos, decreases. ✓

(D) The price of guacamole, a complement in consumption for tacos, decreases.

(E) The price of burritos, a substitute in consumption for tacos, decreases.

**Answer C**

Correct. A decrease in the price of an input in the production of a good decreases the cost of producing that good, which increases the supply of the good in the short run.

**45.** Which of the following changes will lead to an increase in the supply of good X?

(A) An increase in the price of good X

(B) An increase in the wages of labor used to produce good X

(C) A decrease in the price of energy, a key input to the production of good X ✓

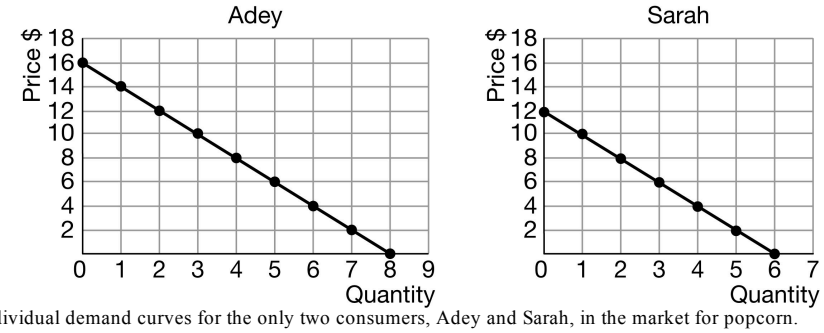
(D) An increase in the demand for good X

(E) A decrease in the number of sellers of good X

**Answer C**

Correct. A decrease in input prices (energy prices) decreases the cost of production and shifts the supply curve to the right. As a result, more of the good will be offered for sale at each possible price for the good.

**46.**




The graphs above show the individual demand curves for the only two consumers, Adey and Sarah, in the market for popcorn.

As the price of popcorn decreases from $12 to $6, how does the quantity demanded change along the market demand curve?

(A) It increases from 2 to 4 units.

(B) It increases from 2 to 5 units.

(C) It increases from 2 to 8 units. ✓

(D) It increases from 0 to 14 units.

(E) It increases from 8 to 14 units.

**Answer C**

Correct. At $12, Adey buys 2 units and Sarah buys 0 units for a total quantity of 2 units in the market. At $6, Adey buys 5 units and Sarah buys 3 units for a total market quantity of 8 units. Thus, when the price decreases from $12 to $6, the quantity demanded along the market demand curve increases from 2 to 8 units.

# Unit 2 Practice Questions - ALL

**47.** *In the United States, textiles are sold in two separate and perfectly competitive markets. The textiles produced in the United States are sold in market A, and imported textiles are sold in market B.*

(a) Explain how the supply curve for textiles produced in the United States will be affected by each of the following.

(i) A decrease in the number of firms in the United States producing textiles
(ii) An increase in the price of textiles

Assume that textiles produced in market A and market B are close substitutes

(b) Using one graph for market A and another for market B, show and explain how a substantial increase in the tariff on textiles imported into the United States will affect each of the following.

(i) Equilibrium price and quantity of textiles sold in market B (imported textiles)
(ii) Equilibrium price and quantity of textiles sold in market A (textiles produced in the United States)

Assume that the labor market for textile workers is perfectly competitive. Following a decrease in the supply of textile workers, the wage rate of textile workers increases.

(c) Using a new graph for market A, show and explain how a substantial increase in the wage rate of textile workers will affect the equilibrium price and quantity of textiles sold in market A.

(d) Using a graph, show and explain how the increase in the wage rate of textile workers and the change in the equilibrium price and quantity of textiles you identified in part (c) will affect each of the following.

(i) A firm's demand for labor
(ii) A firm's supply of labor

Respond to all parts of the question.

**Part A**

**2 Points**

- **1 -** for inward shift in supply; a decrease in supply
- **1 -** for movement along the supply curve; an increase in the quantity supplied or supply curve does not change

| 0 | 1 | 2 ✓ |
|---|---|---|

The student earns all of the following points:

- **1 -** for inward shift in supply; a decrease in supply
- **1 -** for movement along the supply curve; an increase in the quantity supplied or supply curve does not change

**Part B**

**4 Points**

- **1 -** for import Market B: shift inward (decrease) supply: need correct graph
- **1 -** leading to increase price and reduced quantity in market B (either in a correct graph or a verbal explanation
- **1 -** domestic Market A: shift out (increase) in demand need correct graph +verbal linkage to the price increase in Import Market B in part (b-i) below
- **1 -** leading to increased price and increased quantity in market A (either in a correct graph or a verbal explanation)

| 0 | 1 | 2 | 3 | 4 ✓ |
|---|---|---|---|---|

The student earns all of the following points:

- **1 -** for import Market B: shift inward (decrease) supply: need correct graph
- **1 -** leading to increase price and reduced quantity in market B (either in a correct graph or a verbal explanation
- **1 -** domestic Market A: shift out (increase) in demand need correct graph +verbal linkage to the price increase in Import Market B in part (b-i) below
- **1 -** leading to increased price and increased quantity in market A (either in a correct graph or a verbal explanation)

**Part C**

**1 Points**

# Unit 2 Practice Questions - ALL

- **1 -** for supply shifts in (decrease): leading to a price increase and a decrease in quantity on a correctly labeled graph

| 0 | 1 ✓ |
|---|---|

The student earns all of the following points:

- **1 -** for supply shifts in (decrease): leading to a price increase and a decrease in quantity on a correctly labeled graph

**Part D**

**2 Points**

**1 -** for MRP1 shifts out due to an increase in the output price

**1 -** for labor supply to the firm (must be perfect elastic or horizontal) shifts up following the increase in the wage rate

| 0 | 1 | 2 ✓ |
|---|---|---|

The student earns all of the following points:

- **1 -** for MRP1 shifts out due to an increase in the output price
- **1 -** for labor supply to the firm (must be perfect elastic or horizontal) shifts up following the increase in the wage rate

**48.** Which of the following best describes the law of demand?

(A) When income increases, the demand for goods increases.
(B) When the price of a good decreases, the demand for the good increases.
(C) When the price of a good decreases, the quantity demanded of the good decreases.
(D) When the price of a good increases, the quantity demanded of the good decreases. ✓
(E) When the demand for a good increases, consumers' willingness and ability to buy the good increases.

**Answer D**

Correct. The law of demand describes the negative relationship between the price and quantity demanded. When the price of a good increases, there will be an upward movement along the demand curve for the good, resulting in a decrease in the quantity demanded of the good.

**49.** A change in which of the following causes a movement along a given demand curve for a normal good?

(A) Consumer income
(B) The demand for the good
(C) The price of the good ✓
(D) The price of a substitute good in consumption
(E) The number of buyers

**Answer C**

Correct. A change in the price of the good (an increase or a decrease), all other things remaining constant, causes a movement along a given demand curve for the good as described by the law of demand. An increase in price causes an upward movement resulting in a decrease in quantity demanded, and a decrease in price causes a downward movement along the demand curve, resulting in an increase in quantity demanded.

# Unit 2 Practice Questions - ALL

**50.** Which of the following best describes the law of demand?

(A) The price of a good increases when the demand for the good increases.
(B) The price of a good decreases when the supply of the good decreases.
(C) When the price of a good increases, its demand decreases.
(D) When the price of a good decreases, its quantity demanded increases. ✓
(E) Demand creates its own supply.

**51.** Which of the following explains why the supply curve is upward sloping?

(A) At a higher price, consumers are willing to buy more of the good.
(B) At a lower price, consumers are able to buy more of the good.
(C) Producers receive subsidies as they increase production.
(D) At a higher quantity, producers are more able to control the market price.
(E) At a higher price, producers are willing to sell more to increase their profits. ✓

**Answer E**

Correct. All other things remaining constant, an increase in price of a good increases profitability, incentivizing sellers to increase the quantity supplied. Thus, as price increases the quantity supplied increases, implying that the supply curve is upward sloping.

**52.** Which of the following explains why a decrease in the price of a normal good will lead to an increase in the quantity demanded of the good?

(A) A lower price will increase consumers' purchasing power. ✓
(B) A lower price will increase consumers' marginal utility.
(C) A lower price will increase demand for the good.
(D) A lower price will increase demand for substitute goods.
(E) A lower price will decrease demand for complementary goods.

**53.** Which of the following statements about the market supply curve is true?

(A) An increase in input prices will shift the market supply curve to the right.
(B) At each price, a horizontal summation of the quantity supplied by each firm will yield the market supply curve. ✓
(C) At each quantity supplied, a vertical summation of the price set by each firm will yield the market supply curve.
(D) A decrease in the price will shift the market supply curve to the left.
(E) The law of supply states that the market supply curve may shift right, shift left, or remain the same as the price increases.

**Answer B**

Correct. The market supply is the total quantity of a good or service all producers are willing to provide at the prevailing set of relative prices during a defined period of time. Therefore, the market supply curve is derived by the horizontal summation of the quantity supplied by each firm in the market at each price.

**54.** The market supply curve for a product is derived from the individual firm supply curves by

(A) multiplying the equilibrium quantity sold by the number of consumers in the market
(B) multiplying the equilibrium quantity sold by the number of producers in the market
(C) multiplying the quantities each producer sells by the market price
(D) summing the quantities each producer sells at each possible price ✓
(E) summing the quantities each producer sells and multiplying by the market price

**Answer D**

Correct. The supply curve describes the relationship between prices and quantities supplied for each producer in the market. The market supply curve is obtained by horizontally summing the individual supply curves (that is, by adding the quantities supplied at each possible price by each producer in the market).

# Unit 2 Practice Questions - ALL

**55.** Which of the following is true about the market supply curve for a good?

(A) It is derived from the summation of the marginal revenue product of labor hired by individual firms.
(B) It is derived from the summation of the marginal product of labor hired by individual firms.
(C) It is derived from the summation of individual firms' quantity supplied at each price. ✓
(D) It lies above the market demand curve at quantities less than the market equilibrium quantity.
(E) It lies below the market demand curve at quantities greater than the market equilibrium quantity.

**Answer C**

Correct. The market supply curve for a good is derived by adding the quantity supplied by each supplier of a good at each available price.

# Unit 2 Practice Questions - ALL

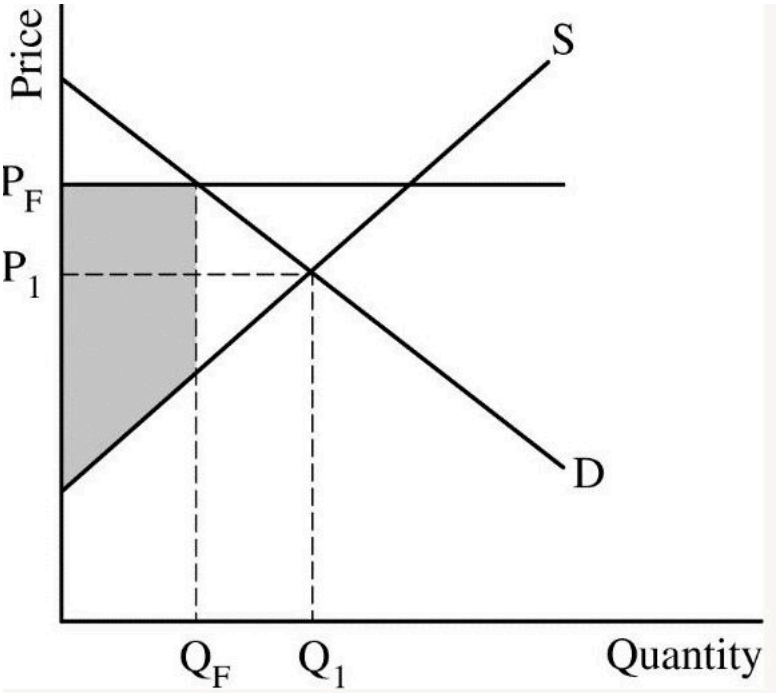
**56.** Respond to all parts of the question.

**Directions:** You are advised to spend the first 10 minutes reading all of the questions and planning your answers. You will then have 50 minutes to answer all three of the following questions. You may begin writing your responses before the reading period is over. It is suggested that you spend approximately half your time on the first question and divide the remaining time equally between the next two questions.Include correctly labeled diagrams, if useful or required, in explaining your answers. A correctly labeled diagram must have all axes and curves clearly labeled and must show directional changes. Use a pen with black or dark blue ink.

Assume milk is produced and sold in a perfectly competitive market. To help milk producers, the government imposes an effective price floor on milk. Assume milk producers continue to sell milk only to households after the imposition of the price floor.

1. Draw a correctly labeled graph for the milk market and show the price floor, labeled $P_F$ , and the quantity of milk purchased by households, labeled $Q_F$.
2. Is the market for milk allocatively efficient after the price floor is imposed? Explain.
3. On your graph from part (a), shade the area that represents total producer surplus after the price floor is imposed.
4. Assume the absolute value of price elasticity of demand for milk is 2 throughout the price range. Would total consumer spending on milk increase, decrease, not change, or be indeterminate after the imposition of the price floor? Explain.
5. Assume the price floor in the milk market caused the equilibrium price of eggs, a related consumption good, to increase.
    1. Draw a correctly labeled graph of the egg market, and show the effect of the price floor in the milk market on the egg market.
    2. What economic term describes the relationship between milk and egg?

**Part A**



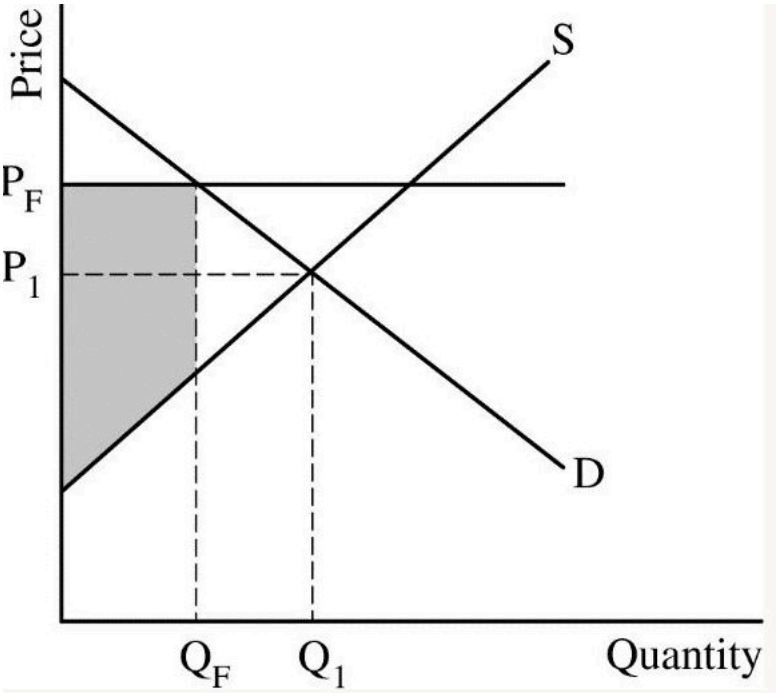

2 points:

- One point is earned for drawing a correctly labeled graph of the market for milk with an upward sloping supply curve and a downward sloping demand curve.
- One point is earned for drawing an effective price floor, labeled PF, above the equilibrium price and for identifying the new quantity of milk, labeled QF, from the demand curve.

| 0 | 1 | 2 ✓ |
|---|---|---|

**Student receives 2/2 Point(s)**

## Unit 2 Practice Questions - ALL




2 points:

- One point is earned for drawing a correctly labeled graph of the market for milk with an upward sloping supply curve and a downward sloping demand curve.
- One point is earned for drawing an effective price floor, labeled PF, above the equilibrium price and for identifying the new quantity of milk, labeled QF, from the demand curve.

**Part B**

1 point:

- One point is earned for stating the market is not allocatively efficient after the price floor is imposed and for explaining that marginal benefit is greater than marginal cost (MB > MC).

| 0 | 1 ✓ |
|---|---|

**Student receives 1/1 Point(s)**

1 point:

- One point is earned for stating the market is not allocatively efficient after the price floor is imposed and for explaining that marginal benefit is greater than marginal cost (MB > MC).

**Part C**

1 point:

- One point is earned for completely shading the area representing the producer surplus.

| 0 | 1 ✓ |
|---|---|

**Student receives 1/1 Point(s)**

1 point:

- One point is earned for completely shading the area representing the producer surplus.

**Part D**

# Unit 2 Practice Questions - ALL

1 point:

- One point is earned for stating that total consumer spending on milk will decrease, and for explaining the demand is elastic or that the percentage increase in the price of milk will be less than the percentage decrease in the quantity demanded.

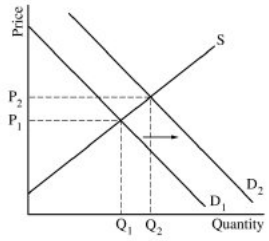
| 0 | 1 ✓ |
|---|---|

**Student receives 1/1 Point(s)**

1 point:

- One point is earned for stating that total consumer spending on milk will decrease, and for explaining the demand is elastic or that the percentage increase in the price of milk will be less than the percentage decrease in the quantity demanded.

**Part E**

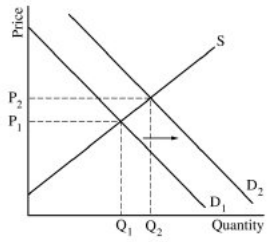



2 points

- One point is earned for drawing a correctly labeled graph for the egg market with an upward sloping supply curve and a downward sloping demand curve, and for showing a rightward shift in the demand curve for eggs.
- One point is earned for stating that the two goods are substitutes.

| 0 | 1 | 2 ✓ |
|---|---|---|

**Student receives 2/2 Point(s)**




2 points

- One point is earned for drawing a correctly labeled graph for the egg market with an upward sloping supply curve and a downward sloping demand curve, and for showing a rightward shift in the demand curve for eggs.
- One point is earned for stating that the two goods are substitutes.

# Unit 2 Practice Questions - ALL

**57.** The market for bottled mineral water is perfectly competitive. After the discovery of several new sources of mineral water, the price of bottled mineral water decreases. The substitution effect of the price decrease implies an increase in which of the following?

(A) The supply of bottled mineral water
(B) The quantity demanded of bottled mineral water ✓
(C) The demand for bottled mineral water
(D) The demand for bottled purified water, a substitute in consumption
(E) The total revenue of firms selling bottled mineral water

**Answer B**

Correct. The substitution effect indicates that, as the price of a good (such as bottled mineral water) decreases, consumers will substitute into greater consumption of the good, increasing the quantity demanded of the good.

**58.** Which of the following would cause the supply curve for notebook computers to shift to the right?

(A) An increase in the price of notebook computers
(B) An increase in the number of firms producing notebook computers ✓
(C) An increase in the wages of workers in the notebook-computer industry
(D) A decrease in the price of notebook computers
(E) A decrease in the supply of notebook computers

**59.** One reason consumers typically increase the quantity of a good they purchase when the price of the good decreases is that

(A) the marginal utility of the good increases
(B) consumers' purchasing power increases ✓
(C) consumers increase their purchases of substitute items
(D) consumers increase their purchases of complementary items
(E) the demand for the good increases

**60.** Which of the following events will cause the demand curve for hamburgers to shift to the right?

(A) An increase in the price of pizza, a substitute for hamburgers ✓
(B) An increase in the price of a french fries, a complement to hamburgers
(C) An increase in the price of hamburgers
(D) A decrease in the price of hamburgers
(E) A decrease in the cost of producing hamburgers

**61.** Individual private property rights provide people incentives to

(A) meet societal goals rather than pursue their own self-interest
(B) produce goods and services regardless of market demand
(C) achieve equitable distribution of goods and services through competitive markets
(D) focus only on benefits without regard to costs
(E) produce goods and services that are valued in markets ✓

**Answer E**

Correct. Individual private property rights provide people incentives to use available resources to produce goods and services that will allow them to profit by selling their goods and services to consumers who value them. Market prices provide the incentive and the signal regarding what is valued.

**62.** Which of the following will most likely happen in the market for good X if the price of good X decreases?

(A) The supply of good X will decrease.
(B) The demand for good X will increase.
(C) The quantity demanded for good X will increase. ✓
(D) The demand will decrease and the supply will increase.
(E) The quantity supplied for good X will increase.

# Unit 2 Practice Questions - ALL

**63.** Include correctly labeled diagrams, if useful or required, in explaining your answers. A correctly labeled diagram must have all axes and curves clearly labeled and must show directional changes. If the question prompts you to "Calculate," you must show how you arrived at your final answer.

RKB is a profit-maximizing monopoly that produces a new, patented electronic device. RKB is earning positive economic profit.

(a) Draw a correctly labeled graph for RKB, and show each of the following.

(i) The profit-maximizing quantity, labeled $Q_M$
(ii) The profit-maximizing price, labeled $P_M$
(iii) The average total cost curve consistent with RKB earning positive economic profit
(iv) The area representing the deadweight loss, shaded completely

(b) The government wants RKB to produce the allocatively efficient quantity. Would the government impose a binding price ceiling, a binding price floor, a per-unit tax, or a lump-sum tax?

(c) Suppose that the government does not impose the policy you identified in part (b). Consumers now become aware of research that confirms the use of this new device harms users' vision. Given widespread consumer awareness of this research, what will happen to RKB's profit-maximizing quantity in the short run? Explain.

(d) Assume that RKB hires workers in a perfectly competitive labor market.

(i) Draw a correctly labeled graph for the labor market, showing the equilibrium wage and quantity of labor, labeled $W_E$ and $Q_E$, respectively.
(ii) Suppose immigration increases the number of workers in this labor market. On your graph in part (d)(i), show the new equilibrium wage and quantity of labor, labeled $W_2$ and $Q_2$, respectively.
(iii) RKB uses the optimal combination of capital and labor in its production process. The firm rents capital at $500 per unit, and the last unit of capital rented has a marginal product of 2,500 units. If the marginal product of the last unit of labor hired is 1,000 units, calculate the wage rate. Show your work.

Respond to all parts of the question.

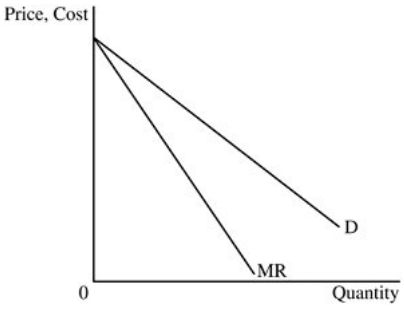
**Part A**

Select a point value to view scoring criteria, solutions, and/or examples and to score the response.

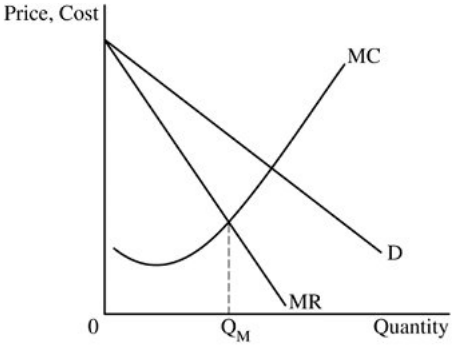
| 0 | 1 | 2 | 3 | 4 | 5 ✓ |
|---|---|---|---|---|---|

The response accurately includes five of the criteria below.

☐ Draws a correctly labeled graph of a monopoly with a downward-sloping demand (D) curve and a downward-sloping marginal revenue (MR) curve with the MR curve below the D curve.

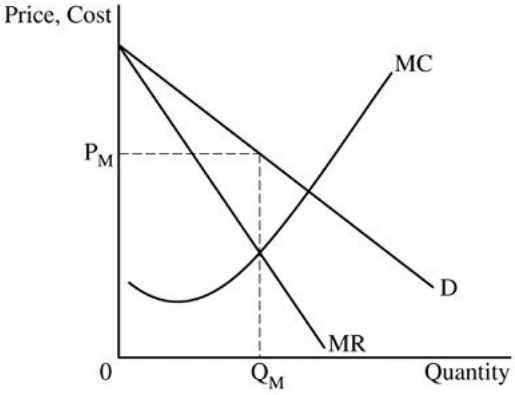



☐ Shows a marginal cost (MC) curve and the profit-maximizing quantity, labeled $Q_M$, where $MR = MC$.

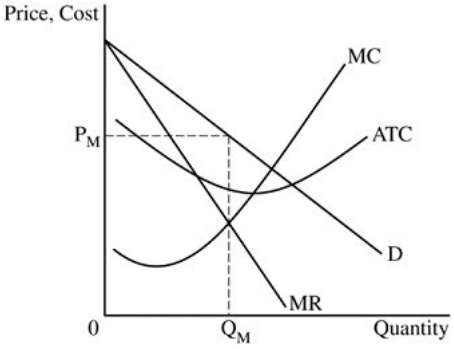



☐ Shows the profit-maximizing price, labeled $P_M$, from the demand curve at $Q_M$.

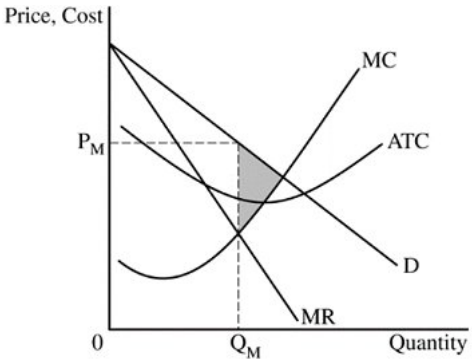
# Unit 2 Practice Questions - ALL




Shows the average total cost (ATC) curve below $P_M$ at $Q_M$ and the MC curve passing through the minimum point of the ATC curve.




Shows the area of the deadweight loss, shaded completely.




**Part B**

Select a point value to view scoring criteria, solutions, and/or examples and to score the response.

| 0 | 1 ✓ |
|---|---|

The response accurately includes the criterion below.

- States that the government would impose a binding price ceiling.

**Part C**

Select a point value to view scoring criteria, solutions, and/or examples and to score the response.

| 0 | 1 ✓ |
|---|---|

The response accurately includes the criterion below.

# Unit 2 Practice Questions - ALL

☐ States that the profit-maximizing quantity will decrease and explains that the demand for the device will decrease, causing the MR curve to shift to the left intersecting the MC curve at a lower quantity.

**Part D**

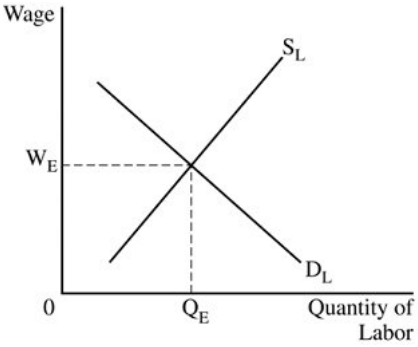
Select a point value to view scoring criteria, solutions, and/or examples and to score the response.

The response must show appropriate work in order to receive the point.

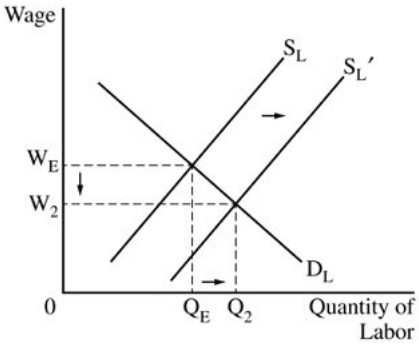
| 0 | 1 | 2 | 3 ✓ |
|---|---|---|---|

The response accurately includes three of the criteria below.

☐ Draws a correctly labeled graph of a perfectly competitive labor market with a downward-sloping demand (D) curve and an upward-sloping supply (S) curve and shows the equilibrium wage and quantity of labor, labeled $W_E$ and $Q_E$, respectively.




☐ Shows a rightward shift in the labor supply curve, resulting in a lower equilibrium wage rate, labeled $W_2$, and a higher equilibrium quantity of labor, labeled $Q_2$.




☐ Calculates the wage rate as \$200 and shows the work.

$$\frac{\text{Marginal Product of Capital}}{\text{Rental Price}} = \frac{\text{Marginal Product of Labor}}{\text{Wage Rate}}$$

$$\frac{2{,}500}{\$500} = \frac{1{,}000}{\text{Wage Rate}}$$

$$\text{Wage Rate} = \$200$$

# Unit 2 Practice Questions - ALL

**64.** Sasha is a utility-maximizing consumer who spends all of her income on peanuts and bananas, both of which are normal goods.

a. Assume that the last unit of peanuts consumed increased Sasha's total utility from 40 utils to 48 utils and that the last unit of bananas consumed increased her total utility from 52 utils to 56 utils.

i. If the price of a unit of peanuts is $1 and Sasha is maximizing utility, calculate the price of a unit of bananas.

ii. If the price of a unit of peanuts increases and the price of a unit of bananas remains unchanged from the price you determined in part (a)(i), how will Sasha's purchase of peanuts change?

b. Assume that the cross-price elasticity of demand between peanuts and bananas is positive. A widespread disease has destroyed the banana crop. What will happen to the equilibrium price and quantity of peanuts in the short run? Explain.

c. Assume that the price of bananas increases.

i. Will the substitution effect increase, decrease, or have no effect on the quantity of bananas demanded?

ii. What happens to Sasha's real income?

**Part A**

2 points:

- One point is earned for calculating the price of a unit of bananas, $4/8 = 0.50$.
- One point is earned for stating that Sasha will purchase fewer peanuts.

| 0 | 1 | 2 ✓ |
|---|---|---|

Student receives 2/2 point(s)

2 points:

- One point is earned for calculating the price of a unit of bananas, $4/8 = 0.50$.
- One point is earned for stating that Sasha will purchase fewer peanuts.

**Part B**

2 points:

- One point is earned for stating that the equilibrium price and quantity of peanuts will both increase.
- One point is earned for explaining that peanuts and bananas are substitutes, and since the price of bananas increased, it would cause the demand for peanuts to increase.

| 0 | 1 | 2 ✓ |
|---|---|---|

Student receives 2/2 point(s)

2 points:

- One point is earned for stating that the equilibrium price and quantity of peanuts will both increase.
- One point is earned for explaining that peanuts and bananas are substitutes, and since the price of bananas increased, it would cause the demand for peanuts to increase.

**Part C**

2 points:

- One point is earned for stating that the substitution effect causes the quantity of bananas demanded to decrease.
- One point is earned for stating that Sasha's real income will decrease.

| 0 | 1 | 2 ✓ |
|---|---|---|

# Unit 2 Practice Questions - ALL

Student receives 2/2 point(s)

2 points:

- One point is earned for stating that the substitution effect causes the quantity of bananas demanded to decrease.
- One point is earned for stating that Sasha's real income will decrease.

**65.** An increase in the supply of good X resulted in an increase in the price and quantity of good Y. It can be concluded that good Y is

(A) an inferior good
(B) a luxury good
(C) a normal good
(D) a substitute for good X
(E) a complement for good X ✓

**Answer E**

Correct. Goods are complements of one another if a decrease in the price of one good leads to an increase in demand for the other good. An increase in the supply of good X will cause the price of good X to decrease. The result of this change is an increase in the price and quantity of good Y, which would be caused by an increase in the demand for good Y. Therefore, goods X and Y are complements.

# Unit 2 Practice Questions - ALL

**66.** Shrimp and chicken are substitute inputs in the production of frozen meals. Both shrimp and chicken are sold in perfectly competitive markets. If the government imposes a per-unit tax on shrimp, how will the demand for chicken and the equilibrium price of frozen meals be affected in the short run?

(A) ✓

| Demand for Chicken | Equilibrium Price of Frozen Meals |
|---|---|
| Increase | Increase |

(B)

| Demand for Chicken | Equilibrium Price of Frozen Meals |
|---|---|
| Increase | Decrease |

(C)

| Demand for Chicken | Equilibrium Price of Frozen Meals |
|---|---|
| Increase | No change |

(D)

| Demand for Chicken | Equilibrium Price of Frozen Meals |
|---|---|
| Decrease | Increase |

(E)

| Demand for Chicken | Equilibrium Price of Frozen Meals |
|---|---|
| Decrease | Decrease |

**Answer A**

Correct. If the government imposes a per-unit tax on shrimp, the price of shrimp will increase. When the price of shrimp (which is a substitute for chicken in the production of frozen meals) increases, the demand for chicken increases. As the demand for chicken increases, the price of chicken also increases. As a result, since both inputs in the production of frozen meals have increased in price, the supply curve of frozen meals will shift to the left, resulting in an increase in the equilibrium price of frozen meals.

# Unit 2 Practice Questions - ALL

**67.** An increase in the price of good X causes buyers to want to buy more of good Y. Which of the following explains the resulting change in the market?

(A) The demand curve for good X will shift to the right because the goods are substitutes in consumption.
(B) The demand curve for good Y will shift to the right because the goods are substitutes in consumption. ✓
(C) The demand curve for good X will shift to the left because the goods are complements in consumption.
(D) The demand curve for good Y will shift to the left because the goods are complements in consumption.
(E) There will be a downward movement along the demand curve for good X because the goods are complements in consumption.

**Answer B**

Correct. The goods are substitutes in consumption because an increase in the price of good X causes buyers to want to buy more of good Y. An increase in the price of good X results in an increase in demand for the substitute good Y, which is represented by a rightward shift of the demand curve for good Y.

**68.** Which of the following is true of the substitution effect of an increase in the price of a normal good?

(A) It works to offset the income effect.
(B) It works to reinforce the income effect. ✓
(C) It is less than the income effect.
(D) It causes an increase in the quantity demanded of the good.
(E) It causes an increase in the demand for the good.

**69.** Assume that good X is a normal good. If the price of good X increases, what will happen?

(A) The substitution and income effects will both lead to more of good X being purchased.
(B) The substitution and income effects will both lead to less of good X being purchased. ✓
(C) The substitution effect will lead to more of good X being purchased, while the income effect will lead to less of good X being purchased.
(D) The substitution effect will lead to less of good X being purchased, while the income effect will lead to more of good X being purchased.
(E) There will be no income effect because only the price of good X has changed.

**Answer B**

Correct. When the price of a good changes, there is both a substitution effect and an income effect. For a normal good, both the substitution effect and the income effect will lead to less of good X being purchased. The substitution effect refers to the consumer's incentive to substitute higher priced goods with lower priced goods, resulting in a decrease in quantity demanded caused by the increase in the price of a normal good. The income effect refers to the decrease in a consumer's purchasing power caused by an increase in the price of a normal good.

**70.** Which of the following occurs as a result of the substitution effect of an increase in the price of a normal good?

(A) The demand for the good decreases.
(B) The demand for the complementary good increases.
(C) The demand for the good becomes more elastic.
(D) The quantity demanded of the substitute good decreases.
(E) The quantity demanded of the good decreases. ✓

**Answer E**

Correct. The substitution effect is one of the factors that explains why the demand curve slopes downward. It explains a movement down along the demand curve for a normal good when the price of the good increases. When the price of a normal good increases, buyers will substitute the higher-priced good for a lesser-priced substitute, and therefore buyers will decrease the quantity demanded of the good whose price has increased.

# Unit 2 Practice Questions - ALL

**71.** Which of the following statements relating to supply is true?

(A) An increase in an input price will lead to an increase in supply.
(B) An increase in the price of a good will lead to an increase in the supply of the good.
(C) A decrease in consumers' income will lead to a decrease in the supply of the good.
(D) A decrease in the price of a good will lead to a decrease in the quantity supplied of the good. ✓
(E) A decrease in the price of a substitute good in production will lead to a decrease in the supply of another substitute good.

**Answer D**

Correct. This describes the law of supply, which describes a movement up along a given supply curve—a decrease in price causes a decrease in the quantity supplied of the good.

**72.** Which of the following will occur as a result of a decrease in the prices of the inputs used to produce a good?

(A) The quantity supplied would increase at each possible price for the good. ✓
(B) The price of the good would increase for any given quantity supplied.
(C) The quantity supplied would increase as the price of the good increased.
(D) The quantity supplied would increase as the price of the good decreased.
(E) The price of the good would increase as the quantity supplied decreased.

**Answer A**

Correct. A decrease in input prices lowers the cost of production and shifts the supply curve to the right. As a result, more of the good will be offered for sale at each possible price for the good.

**73.** According to the law of demand, which of the following occurs when the price of a good increases?

(A) The demand for the good decreases.
(B) The quantity demanded of a substitute good decreases.
(C) The quantity demanded of a complementary good increases.
(D) The quantity demanded of the good increases.
(E) The quantity demanded of the good decreases. ✓

**Answer E**

Correct. According to the law of demand, when the price of a good increases, the quantity demanded of the good decreases, shown by an upward movement along the demand curve.

# Unit 2 Practice Questions - ALL

**74.** Theresa consumes both bagels and toy cars.

| Quantity of Bagels | Marginal Utility from Bagels (utils) | Quantity of Toy Cars | Marginal Utility from Toy Cars (utils) |
|---|---|---|---|
| 1 | 8 | 1 | 10 |
| 2 | 7 | 2 | 8 |
| 3 | 6 | 3 | 6 |
| 4 | 5 | 4 | 4 |
| 5 | 4 | 5 | 3 |
| 6 | 3 | 6 | 2 |

a. The table above shows Theresa's marginal utility from bagels and toy cars.

i. What is her total utility from purchasing three toy cars?

ii. Theresa's weekly income is $11, price of a bagel is 2$, and the price of a toy car is $1. What quantity of bagels and toy cars will maximize Theresa's utility if she spends her entire weekly income on bagels and toy cars? Explain your answer using marginal analysis.

b. Assume that the price of wheat, an input for the production of bagels, increases. Will Theresa's demand for bagels increase, decrease, or not change? Explain.

c. Suppose that Theresa's income elasticity for bagels is -0.2.Does the value of Theresa's income elasticity indicate that bagels are normal goods, inferior goods, substitutes, or complements?

d. Suppose that when the price of toy cars increases by 10 percent, Theresa buys 5 percent fewer toy cars and 4 percent less of a different toy, blocks. Calculate the cross-price elasticity for toy cars and blocks and indicate if it is positive or negative.

Respond to all parts of the question.

**Part A**

**3 Points**

- One point is earned for determining the total utility, which is 24.
- One point is earned for stating that three bagels and five toy cars will be purchased.
- One point is earned for explaining that with this combination of bagels and toys, the marginal utility per dollar spent on bagels equals the marginal utility per dollar spent on toy cars.

| 0 | 1 | 2 | 3 ✓ |
|---|---|---|---|

The student earns all of the following points:

- One point is earned for determining the total utility, which is 24.
- One point is earned for stating that three bagels and five toy cars will be purchased.
- One point is earned for explaining that with this combination of bagels and toys, the marginal utility per dollar spent on bagels equals the marginal utility per dollar spent on toy cars.

**Part B**

One point is earned for stating that Theresa's demand for bagels will not change because the increase in the price of wheat will affect the supply of bagels, not the demand.

| 0 | 1 ✓ |
|---|---|

The student earns all of the following points:

One point is earned for stating that Theresa's demand for bagels will not change because the increase in the price of wheat will affect the supply of bagels, not the demand.

**Part C**

One point is earned for stating that bagels are inferior goods.

# Unit 2 Practice Questions - ALL

| 0 | 1 ✓ |
|---|---|

The student earns all of the following points:

One point is earned for stating that bagels are inferior goods.

**Part D**

One point is earned for calculating the cross-price elasticity for toy cars and blocks: -0.04/0.10 = -0.4

| 0 | 1 ✓ |
|---|---|

The student earns all of the following points:

One point is earned for calculating the cross-price elasticity for toy cars and blocks: -0.04/0.10 = -0.4

**75.** The table below lists the monthly individual demand schedules for text messages for the only three buyers in the market: Allison, Bill, and Chang.

| Price per Text Message | Text Messages Demanded by | | |
|---|---|---|---|
| | Allison | Bill | Chang |
| 4¢ | 500 | 400 | 360 |
| 8¢ | 350 | 300 | 280 |
| 12¢ | 200 | 200 | 200 |
| 16¢ | 50 | 100 | 120 |
| 20¢ | 0 | 0 | 40 |

Which of the following combinations of price and quantity lies on the market demand curve?

(A)

| Price | Quantity |
|---|---|
| 4¢ | 1,000 |

(B)

| Price | Quantity |
|---|---|
| 8¢ | 350 |

(C)

| Price | Quantity |
|---|---|
| 12¢ | 200 |

(D) ✓

| Price | Quantity |
|---|---|
| 16¢ | 270 |

(E)

| Price | Quantity |
|---|---|
| 20¢ | 0 |

# Unit 2 Practice Questions - ALL

**76.** Utility maximization is a fundamental assumption in consumer theory.

a. Explain what is meant by diminishing marginal utility.

b. Assume that a consumer buys only two goods:X and Y. What is the utility-maximizing decision rule for the consumer in allocating total income to good X and good Y?

c. Assume that a utility- maximizing consumer is spending all of her income on the two goods, X and Y. The price per unit of good X is $2, and the price per unit of good Y is 3$. The marginal utility of the last unit of good Y consumed is 15. What is the marginal utility of the last unit of good X consumed?

d. Assume that good X is a normal good and good Y is an inferior good. Assume that the consumer's income does not change. Assume that the price of good X increases.

i. Indicate how the substitution effect of the increase in the price of good X will affect purchases of

1. good X
2. good Y

ii. Indicate how the income effect of the increase in the price of good X will affect purchases of

1. good X
2. good Y

Respond to all parts of the question.

**Part A**

**1 Point**

- One point is earned for stating that as more of a good is consumed, utility increases at a diminishing rate.

| 0 | 1 ✓ |
|---|---|

The student earns all of the following points:

- One point is earned for stating that as more of a good is consumed, utility increases at a diminishing rate.

**Part B**

**1 Point**

- One point is earned for stating that MUx/Px = MUy/Py.

| 0 | 1 ✓ |
|---|---|

The student earns all of the following points:

- One point is earned for stating that MUx/Px = MUy/Py.

**Part C**

**1 Point**

- One point is earned for stating that MUx =10. $(10/2 = 15/3)$

| 0 | 1 ✓ |
|---|---|

The student earns all of the following points:

- One point is earned for stating that MUx = 10. $(10/2 = 15/3)$

**Part D**

**4 Points**

# Unit 2 Practice Questions - ALL

- One point is earned for stating less X.
- One point is earned for stating more Y.
- One point is earned for stating less X.
- One point is earned for stating more Y.

| 0 | 1 | 2 | 3 | 4 ✓ |
|---|---|---|---|---|

The student earns all of the following points:

- One point is earned for stating less X.
- One point is earned for stating more Y.
- One point is earned for stating less X.
- One point is earned for stating more Y.

**77.** Avocado production requires land to grow avocado trees and workers to pick the avocados. Which of the following is most likely to occur if a binding minimum wageprice floor on wages is set in the labor market of avocado-farming workers?

(A) Supply of avocados will decrease. ✓

(B) Demand for avocados will decrease.

(C) There will be a surplus of avocados.

(D) Avocado producers will hire more workers.

(E) The price of land used to grow avocados will increase.

**Answer A**

Correct. A binding minimum wage set above the equilibrium wage in the labor market of avocado-farming workers will increase the cost of production, which causes the supply of avocados to decrease.

**78.** A city transit authority increases the price of sub- way and bus tickets from $1.25 to 1.50$. If the demand for these tickets is price inelastic, the number of people riding buses and subways and the city's revenues will most likely change in which of the following ways?

(A)

| Number of People Riding | City's Revenues |
|---|---|
| Increase | Increase |

(B) ✓

| Number of People Riding | City's Revenues |
|---|---|
| Decrease | Increase |

(C)

| Number of People Riding | City's Revenues |
|---|---|
| Decrease | Decrease |

(D)

| Number of People Riding | City's Revenues |
|---|---|
| Decrease | Remain constant |

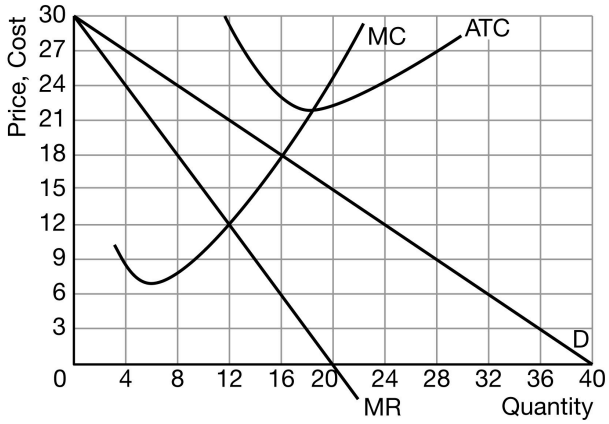
(E)

| Number of People Riding | City's Revenues |
|---|---|
| Remain constant | Increase |

# Unit 2 Practice Questions - ALL

**79. Include correctly labeled diagrams, if useful or required, in explaining your answers. A correctly labeled diagram must have all axes and curves clearly labeled and must show directional changes. If the question prompts you to "Calculate," you must show how you arrived at your final answer.**

Use the following graph to answer parts (a)-(e). Prices and costs are in dollars.




The graph above shows the demand ($D$), marginal revenue ($MR$), marginal cost ($MC$), and average total cost ($ATC$) curves for one of many profit-maximizing firms operating in the short run in an industry in which there are no barriers to entry. Each firm sells a similar but not identical product.

(a) What will happen to total revenue if the firm raises the price from $9 to $12? Explain.

(b) At 16 units, is the firm producing at the allocatively efficient quantity? Explain.

(c) If the firm produces 12 units, will the firm's economic profit be positive, negative, or zero? Explain.

(d) Use the relationship between the marginal cost curve and the average total cost curve to explain why the average total cost curve is increasing at 20 units.

(e) Calculate the consumer surplus if the firm charges the profit-maximizing price. Show your work.

Respond to all parts of the question.

**Part A**

Select a point value to view scoring criteria, solutions, and/or examples and to score the response.

| 0 | ✓ 1 |
|---|---|

The response states that total revenue will increase and explains that demand is price inelastic in this price range; or uses numbers to explain that the percentage decrease in quantity demanded is less than the percentage increase in price, the absolute value of the price elasticity of demand is less than 1, or the total revenue increases.

**Part B**

Select a point value to view scoring criteria, solutions, and/or examples and to score the response.

| 0 | ✓ 1 |
|---|---|

The response states that yes, the firm is producing at the allocatively efficient quantity and explains that allocative efficiency is achieved when the marginal cost to producers equals the marginal benefit to consumers, which occurs where the demand curve intersects the marginal cost curve (at 16 units).

**Part C**

Select a point value to view scoring criteria, solutions, and/or examples and to score the response.

| 0 | ✓ 1 |
|---|---|

The response states that at 12 units the firm's economic profit is negative (or there is an economic loss) and explains that the price is below the ATC.

**Part D**

# Unit 2 Practice Questions - ALL

Select a point value to view scoring criteria, solutions, and/or examples and to score the response.

| 0 | 1 ✓ |
|---|---|

The response explains that at 20 units marginal cost is greater than average total cost, which means that the cost of producing the next unit is higher than the average total cost, which pulls up the average total cost for the next unit.

**Part E**

Select a point value to view scoring criteria, solutions, and/or examples and to score the response.

| 0 | 1 ✓ |
|---|---|

The response calculates the consumer surplus as $54 and shows the work:

$\text{Consumer Surplus} = \frac{1}{2}(12)(\$30 - \$21) = \$54$

**80.** A monopolist produces two unrelated goods, X and Y. The demand for X is currently price elastic and the demand for Y is currently price inelastic. To increase its total revenue, the firm should change the price of X and Y in which of the following ways?

(A)

| **Price of X** | **Price of Y** |
|---|---|
| Increase | No change |

(B)

| **Price of X** | **Price of Y** |
|---|---|
| Increase | Decrease |

(C)

| **Price of X** | **Price of Y** |
|---|---|
| Increase | Increase |

(D) ✓

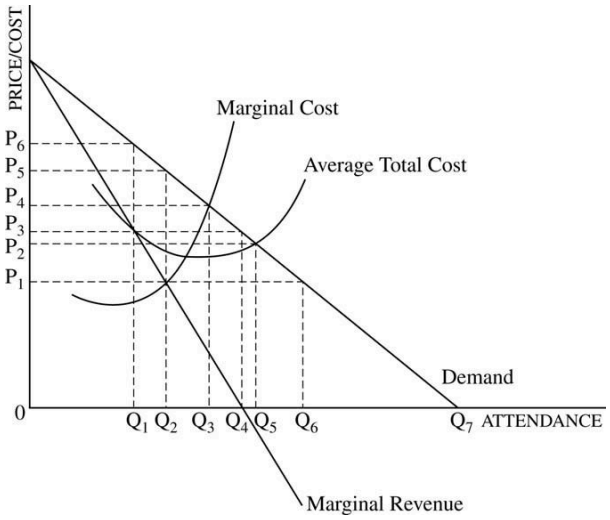
| **Price of X** | **Price of Y** |
|---|---|
| Decrease | Increase |

(E)

| **Price of X** | **Price of Y** |
|---|---|
| Decrease | Decrease |

# Unit 2 Practice Questions - ALL

**81.**




There is one art museum on the island of Watsonia. The museum's demand and cost curves are shown in the graph above. The museum currently relies on an admission charge for some of its funding. Its directors are debating about how to set the admission charge.

a. Using the labeling of the graph above, identify the price and quantity associated with the following objectives.

i. The museum maximizes its profit.

ii. The museum maximizes its total revenue.

iii. The museum maximizes the sum of consumer and producer surplus.

iv. The museum maximizes its attendance, as long as it breaks even.

b. When the attendance is $Q_1$, is the demand price elastic, inelastic, or unit elastic? Explain.

c. Assume that the price is set at $P_2$. Assuming the existence of an opportunity cost, indicate whether the museum's accounting profits would be positive, negative, or zero. Explain why.

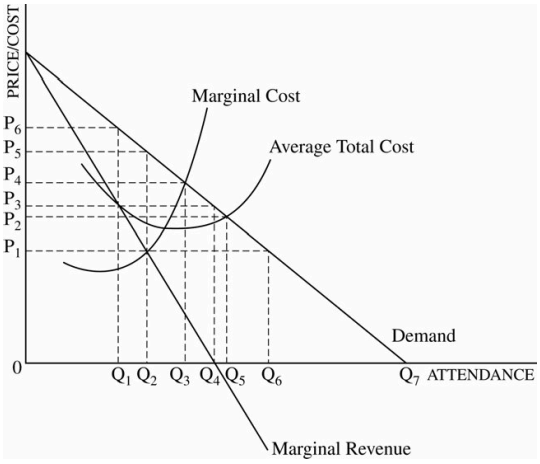
d. Assume that the government decides the museum should charge no admission and agrees to subsidize the museum for any losses.

i. Using the labeling in the graph, identify the museum's attendance under that circumstance.

ii. Would the outcome be allocatively efficient? Explain.

Respond to all parts of the question.

**Part A**




4 points:

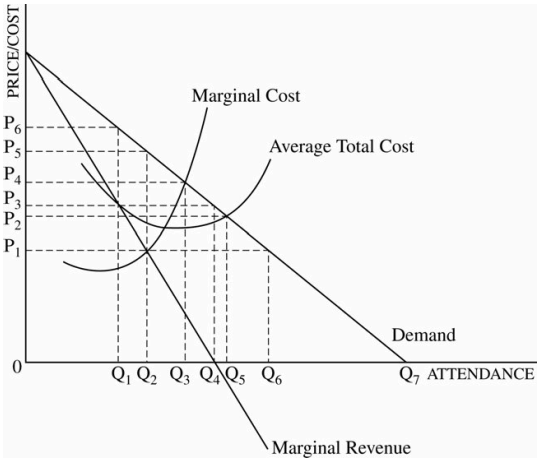
- One point is earned for indicating P5, Q2.
- One point is earned for indicating P3, Q4.
- One point is earned for indicating P4, Q3.

# Unit 2 Practice Questions - ALL

- One point is earned for indicating P2, Q5.

| 0 | 1 | 2 | 3 | 4 ✓ |
|---|---|---|---|---|

Student receives 4 /4 point(s)




4 points:

- One point is earned for indicating P5, Q2.
- One point is earned for indicating P3, Q4.
- One point is earned for indicating P4, Q3.
- One point is earned for indicating P2, Q5.

**Part B**

2 points:

- One point is earned for stating that demand is elastic at Q1.
- One point is earned for explaining that MR is greater than zero, OR Q1 is to the left of the midpoint, OR Q1 is in the upper half of the demand curve.

| 0 | 1 | 2 ✓ |
|---|---|---|

Student receives 2/2 point(s)

2 points:

- One point is earned for stating that demand is elastic at Q1.
- One point is earned for explaining that MR is greater than zero, OR Q1 is to the left of the midpoint, OR Q1 is in the upper half of the demand curve.

**Part C**

2 points:

- One point is earned for stating that accounting profits are positive.
- One point is earned for explaining that economic profits are zero, opportunity costs exist, and economic profits=accounting profits-opportunity cost.

| 0 | 1 | 2 ✓ |
|---|---|---|

Student receives 2/2 point(s)

# Unit 2 Practice Questions - ALL

2 points:

- One point is earned for stating that accounting profits are positive.
- One point is earned for explaining that economic profits are zero, opportunity costs exist, and economic profits=accounting profits-opportunity cost.

**Part D**

3 points:

- One point is earned for indicating Q7.
- One point is earned for concluding that the outcome is not allocatively efficient.
- One point is earned for explaining that MC>P or MSC>MSB.

| 0 | 1 | 2 | 3 ✓ |
|---|---|---|---|

Student receives 3/3 point(s)

3 points:

- One point is earned for indicating Q7.
- One point is earned for concluding that the outcome is not allocatively efficient.
- One point is earned for explaining that MC>P or MSC>MSB.

# Unit 2 Practice Questions - ALL

**82.** *A*ssume all of the following about imported and domestically produced shoes.

- They are sold in two separate and perfectly competitive markets.
- They are close substitutes
- The demand for both is price elastic

Now assume that a tariff is imposed on imported shoes.

a. Using a correctly labeled graph, show the impact of the tariff on each of the following in the market for imported shoes.

i. Price

ii. Output

b. Using a new correctly labeled graph, show the impact of the tariff on each of the following in the market for domestically produced shoes.

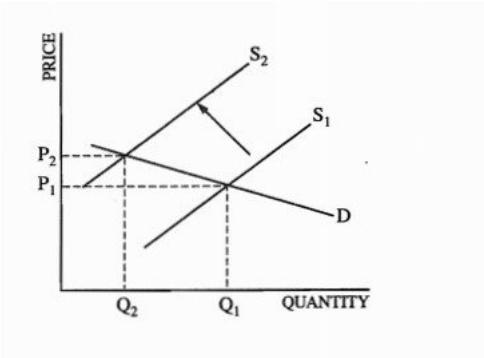
i. Price

ii. Output

c. Given that the demand for imported shoes is price elastic, will expenditures on imported shoes by consumers increase, decrease, or remain the same How do you know?

Respond to all parts of the questions.

**Part A**

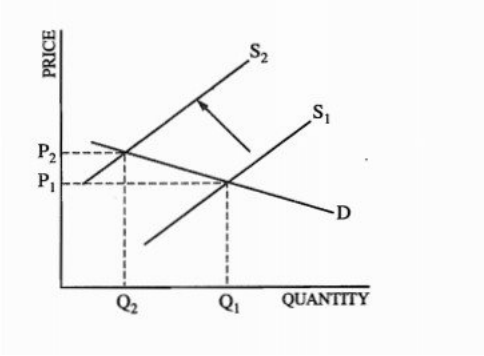



**2 Points**

- **1 point:** (i) Correct graph (Labels D, S, P, &Q) that includes an inward shift in supply.
- **1 point:** (ii) P and Q changes correctly explained using the student's graph of (a)(i)

| 0 | 1 | 2 ✓ |
|---|---|---|

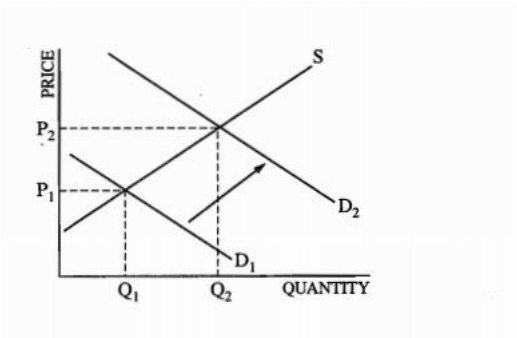
The student earns all of the following points:




- **1 point:** (i) Correct graph (Labels D, S, P, &Q) that includes an inward shift in supply.
- **1 point:** (ii) P and Q changes correctly explained using the student's graph of (a)(i)

# Unit 2 Practice Questions - ALL

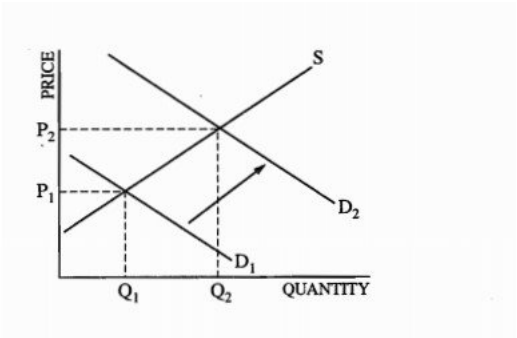
**Part B**




- **1 point:** Correct graph that includes a demand shift consistent with the price change in part (a) with both P and Q consistent with the graph drawn.

| 0 | 1 ✓ |
|---|---|

The student earns all of the following points:




- **1 point:** Correct graph that includes a demand shift consistent with the price change in part (a) with both P and Q consistent with the graph drawn.

**Part C**

**2 Points**

- **1 point:** (i)With elastic demand for imported shoes, the increased price of imported shoes will lead to a reduction in total expenditures.
- **1 point:** (ii)Discussion of the proportional change in P and Q to explain the expenditure change.

| 0 | 1 | 2 ✓ |
|---|---|---|

The student earns all of the following points:

- **1 point:** (i)With elastic demand for imported shoes, the increased price of imported shoes will lead to a reduction in total expenditures.
- **1 point:** (ii)Discussion of the proportional change in P and Q to explain the expenditure change.

**83.** Assume that a monopolist is producing in the inelastic portion of its demand curve. Which of the following will occur if the monopolist decreases its price?

(A) Marginal revenue will decrease, but profits will increase.
(B) Marginal revenue will increase, but profits will decrease.
(C) Total revenue will decrease, but profits will increase.
(D) Both total revenue and profits will decrease. ✓
(E) Both total revenue and profits will increase.

# Unit 2 Practice Questions - ALL

**84.** Assume that bread and butter are complementary goods. The government begins to subsidize the production of wheat, which is an input in the production of bread.

a. For each of the following markets, draw correctly labeled supply and demand graphs and show the effect of the subsidy on the equilibrium price and quantity in the short run.

i. The wheat market

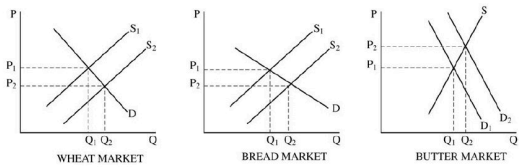
ii. The bread market

iii. The butter market

b. If the demand for bread is price elastic, how will total revenues for the bread producers change as a result of the government subsidy?

Respond to all parts of the question.

**Part A**

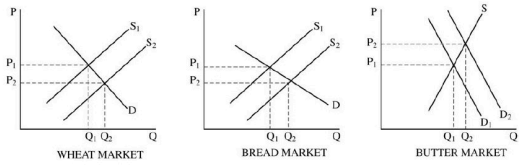



4 points:

- One point is earned for correctly labeled supply and demand graphs for all three markets.
- One point is earned for showing a rightward shift of the supply curve in the wheat market with price decreasing and quantity increasing.
- One point is earned for showing a rightward shift of the supply curve in the bread market with price decreasing and quantity increasing.
- One point is earned for showing a rightward shift of the demand curve in the butter market with price increasing and quantity increasing.

| 0 | 1 | 2 | 3 | 4 ✓ |
|---|---|---|---|---|

Student receives 4/4 point(s)




4 points:

- One point is earned for correctly labeled supply and demand graphs for all three markets.
- One point is earned for showing a rightward shift of the supply curve in the wheat market with price decreasing and quantity increasing.
- One point is earned for showing a rightward shift of the supply curve in the bread market with price decreasing and quantity increasing.
- One point is earned for showing a rightward shift of the demand curve in the butter market with price increasing and quantity increasing.

**Part B**

1 point:

- One point is earned for concluding that the total revenue will increase.

| 0 | 1 ✓ |
|---|---|

Student receives 1/1 point(s)

1 point:

## Unit 2 Practice Questions - ALL

- One point is earned for concluding that the total revenue will increase.

# Unit 2 Practice Questions - ALL

**85.** Assume that Clark Electronics has a monopoly in the production and sale of a new device for detecting and destroying a computer virus. Clark Electronics currently incurs short-run losses, but it continues to operate.

a. What must be true for Clark to continue to operate in the short run?

b. Draw a correctly labeled graph, and show each of the following for Clark.

i. The profit-maximizing price and output

ii. Area of loss

c. *Assume Clark is maximizing profit. What will happen to its total revenue if Clark raises its price? Explain.*

d. *If demand for the new device increases, explain what will happen to each of the following in the short run.*

i. *Profit-maximizing output*

ii. *Total cost*

Respond to all parts of the question.

**Part A**

1 point:

- One point is earned for stating that the firm must be covering its AVC (or TVC), or P>AVC.

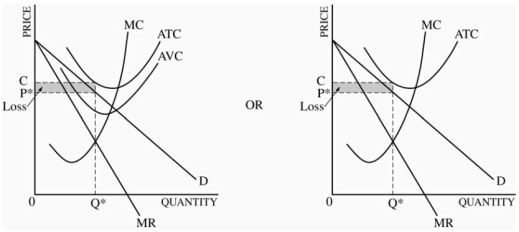
| 0 | 1 ✓ |
|---|---|

Student receives 1/1 point(s)

1 point:

- One point is earned for stating that the firm must be covering its AVC (or TVC), or P>AVC.

**Part B**



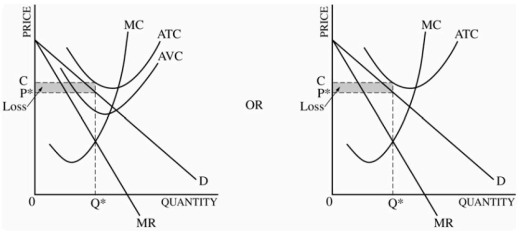

4 points:

- One point is earned for a correctly labeled graph with MR below the demand curve.
- One point is earned for identifying profit-maximizing quantity at MR=MC.
- One point is earned for identifying price on the demand curve above equilibrium quantity and below ATC.
- One point is earned for showing the correct loss area.

| 0 | 1 | 2 | 3 | 4 ✓ |
|---|---|---|---|---|

Student receives 4/4 point(s)

# Unit 2 Practice Questions - ALL




4 points:

- One point is earned for a correctly labeled graph with MR below the demand curve.
- One point is earned for identifying profit-maximizing quantity at MR=MC.
- One point is earned for identifying price on the demand curve above equilibrium quantity and below ATC.
- One point is earned for showing the correct loss area.

**Part C**

2 points:

- One point is earned for indicating that total revenue will fall.
- One point is earned for explaining that demand is elastic or MR is positive.

| 0 | 1 | 2 ✓ |
|---|---|---|

Student receives 2/2 point(s)

2 points:

- One point is earned for indicating that total revenue will fall.
- One point is earned for explaining that demand is elastic or MR is positive.

**Part D**

4 points:

- One point is earned for indicating that the profit-maximizing output will increase.
- One point is earned for explaining that the marginal revenue curve will shift to the right.
- One point is earned for concluding that total cost will increase.
- One point is earned for explaining that output increases.

| 0 | 1 | 2 | 3 | 4 ✓ |
|---|---|---|---|---|

Student receives 4/4 point(s)

4 points:

- One point is earned for indicating that the profit-maximizing output will increase.
- One point is earned for explaining that the marginal revenue curve will shift to the right.
- One point is earned for concluding that total cost will increase.
- One point is earned for explaining that output increases.

# Unit 2 Practice Questions - ALL

**86.** Assume that demand for bottled water is relatively price elastic. An increase in supply of bottled water will result in which of the following?

(A) A decrease in price, leading to an increase in total revenue ✓

(B) A decrease in price, leading to a decrease in total revenue

(C) An excess supply of bottled water

(D) An excess demand for bottled water

(E) A relatively small decrease in price and no change in equilibrium quantity

**87.** Assume that the demand for a certain good is perfectly inelastic and the supply curve of the good is upward sloping. Which of the following occurs in the market for the good if the price of an input used to produce the good increases?

(A) A decrease in both the quantity supplied and the equilibrium amount consumed

(B) A decrease in the quantity supplied and an increase in the equilibrium price

(C) A decrease in the supply and an increase in the equilibrium price ✓

(D) A decrease in both the demand and the equilibrium amount consumed

(E) A decrease in both the quantity demanded and the equilibrium price

**88.** Assume that the price of good X decreases from $10 to $9 per unit and that the quantity demanded of good X increases from 25 to 30 units. In this price range, the demand for good X is

(A) inelastic

(B) elastic ✓

(C) unit elastic

(D) perfectly inelastic

(E) perfectly elastic

# Unit 2 Practice Questions - ALL

**89.** Assume that two firms are operating with identical cost schedules, but one firm is in a perfectly competitive industry, and the other is in a monopolistically competitive industry.

a. Using two correctly labeled graphs, show the long-run equilibrium price and output levels for each of these two firms.

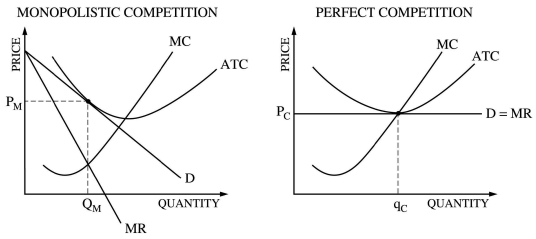
b. Compare the long-run equilibrium price and output levels for these two firms.

c. What level of economic profit will each firm earn in the long run? Why do these results occur?

d. For each of the two firms at the equilibrium quantity, indicate whether the firm's demand curve is perfectly elastic, elastic, unit elastic, inelastic or perfectly inelastic. How can you tell?

Respond to all parts of the question.

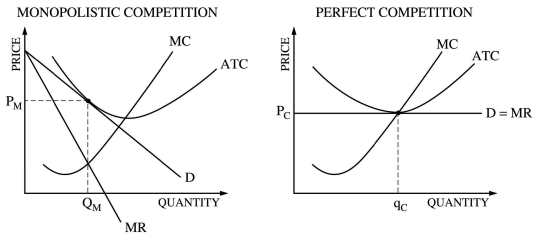
**Part A**




1 point for each graph: two graphs with appropriate cost curves
1 point for each graph: Q indicated for each firm where MR=MC
1 point for each graph: P for each firm read off the correct D curve at correct Q

| 0 | 1 | 2 | 3 | 4 | 5 | 6 ✓ |
|---|---|---|---|---|---|---|

Student receives 6/6 point(s)




1 point for each graph: two graphs with appropriate cost curves
1 point for each graph: Q indicated for each firm where MR=MC
1 point for each graph: P for each firm read off the correct D curve at correct Q

**Part B**

1 point: P in perfect competition is lower than P in monopolistic competition.

1 point: Q in PC is smaller than Q in MC

| 0 | 1 | 2 ✓ |
|---|---|---|

Student receives 2/2 point(s)

1 point: P in perfect competition is lower than P in monopolistic competition.

1 point: Q in PC is smaller than Q in MC

**Part C**

1 point : firm in perfect competition earns zero economic profit
1 point : firm in monopolistic competition earns zero economic profit

# Unit 2 Practice Questions - ALL

1 point : entry of new firms increases industry output, individual firm's output decreases, prices will fall to level of ATC (Correct explanation consistent with the exit of firms is also accepted)

| 0 | 1 | 2 | 3 ✓ |
|---|---|---|---|

Student receives 3/3 point(s)

1 point : firm in perfect competition earns zero economic profit
1 point : firm in monopolistic competition earns zero economic profit
1 point : entry of new firms increases industry output, individual firm's output decreases, prices will fall to level of ATC (Correct explanation consistent with the exit of firms is also accepted)

**Part D**

1 point : for the perfectly competitive firm, demand is perfectly elastic

1 point : because P is constant, the percentage change in P is zero

1 point : for the monopolistically competitive firm demand is elastic

1 point : MR is positive in the elastic portion of the demand curve

| 0 | 1 | 2 | 3 | 4 ✓ |
|---|---|---|---|---|

Student receives 4/4 point(s)

1 point : for the perfectly competitive firm, demand is perfectly elastic

1 point : because P is constant, the percentage change in P is zero

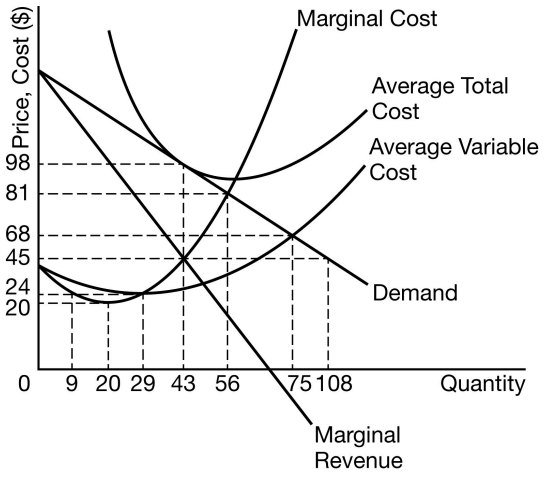
1 point : for the monopolistically competitive firm demand is elastic

1 point : MR is positive in the elastic portion of the demand curve

# Unit 2 Practice Questions - ALL

**90. Include correctly labeled diagrams, if useful or required, in explaining your answers. A correctly labeled diagram must have all axes and curves clearly labeled and must show directional changes. If the question prompts you to "Calculate," you must show how you arrived at your final answer.**

Use the graph provided below to answer parts (a)-(e).




BetterCook, a profit-maximizing firm, has a patent on a kitchen appliance, making it the only producer of that appliance. The graph above shows BetterCook's demand, marginal revenue, average total cost, average variable cost, and marginal cost curves.

(a) Calculate BetterCook's total revenue if the firm produces the allocatively efficient quantity. Show your work.

(b) Starting at a price of $68, if BetterCook were to decrease the price by 3%, will the quantity demanded increase by more than 3%, by less than 3%, or by exactly 3%? Explain.

(c) At a quantity of 29 units, is BetterCook's marginal product increasing, decreasing, or constant? Explain.

(d) Identify the quantity that maximizes BetterCook's profit. Explain.

(e) At the quantity identified in part (d), does BetterCook earn a positive economic profit, a negative economic profit, or zero economic profit? Explain.

Assume that BetterCook's patent expires. Scheff, a company with the capability to produce the same kitchen appliance as BetterCook, intends to enter the market and charge a lower price than BetterCook for the kitchen appliance. BetterCook is considering whether to maintain its price or to lower its price to match Scheff's price. Scheff is considering whether to advertise its entry into the market.

The matrix below shows the payoffs for each combination of strategies, and both players (BetterCook and Scheff) have complete information. The first entry in each cell represents BetterCook's payoff and the second entry represents Scheff's payoff. Each player independently and simultaneously chooses its strategy. Use the matrix provided below to answer parts (f)-(h).

| | | Scheff | |
|---|---|---|---|
| | | Advertise | Not Advertise |
| BetterCook | Maintain Price | 400,150 | 600,250 |
| | Lower Price | 300,650 | 200,450 |

(f) Does Scheff have a dominant strategy? Explain using numbers from the payoff matrix.

(g) Identify the Nash equilibrium. Explain why this is a Nash equilibrium using information from the payoff matrix.

(h) Suppose Scheff makes a credible commitment to BetterCook that if BetterCook lowers its price, then Scheff will pay BetterCook $50. Will this offer result in a Nash equilibrium with different strategies from those identified in part (g) ? Explain using numbers from the payoff matrix.

Respond to all parts of the question.

**Part A**

Select a point value to view scoring criteria, solutions, and/or examples and to score the response.

| 0 | 1 ✓ |
|---|---|

The response calculates BetterCook's total revenue at the allocatively efficient quantity as $4,536 and shows the work.

$\text{Total Revenue} = \text{Price} \times \text{Quantity} = \$81 \times 56 = \$4{,}536$

**Part B**

Select a point value to view scoring criteria, solutions, and/or examples and to score the response.

# Unit 2 Practice Questions - ALL

| 0 | 1 ✓ |
|---|---|

The response states that the quantity demanded will increase by less than 3% and explains that the demand is inelastic in this price range because marginal revenue is negative.

**Part C**

Select a point value to view scoring criteria, solutions, and/or examples and to score the response.

| 0 | 1 ✓ |
|---|---|

The response states that at a quantity of 29 units BetterCook's marginal product is decreasing and explains that the marginal cost is rising.

**Part D**

Select a point value to view scoring criteria, solutions, and/or examples and to score the response.

| 0 | 1 ✓ |
|---|---|

The response identifies that the firm's profit-maximizing quantity as 43 units and explains that at that quantity marginal revenue is equal to marginal cost.

**Part E**

Select a point value to view scoring criteria, solutions, and/or examples and to score the response.

| 0 | 1 ✓ |
|---|---|

The response states that the firm earns zero economic profit and explains that the firm's average total cost curve is tangent to the demand curve, or the firm charges a price equal to the average total cost, or $\mathrm{P} = \mathrm{ATC} = \$98$.

**Part F**

Select a point value to view scoring criteria, solutions, and/or examples and to score the response.

| 0 | 1 ✓ |
|---|---|

The response states that no, Scheff does not have a dominant strategy and explains that when BetterCook chooses to maintain its price, Scheff's payoff is higher when it does not advertise $(\$250 > \$150)$, and when BetterCook chooses to lower its price, Scheff's payoff is higher when it advertises $\$650 > \$450$; therefore, Scheff does not have a dominant strategy.

**Part G**

Select a point value to view scoring criteria, solutions, and/or examples and to score the response.

| 0 | 1 ✓ |
|---|---|

The response identifies the Nash equilibrium as BetterCook maintains its price and Scheff does not advertise with payoffs of $(\$600, \$250)$, and explains that if BetterCook chooses to lower its price, its payoff will decrease from $600 to 200$ and if Scheff chooses to advertise, its payoff will decrease from $250 to 150$; therefore, there is no incentive for either firm to change its strategy.

**Part H**

# Unit 2 Practice Questions - ALL

Select a point value to view scoring criteria, solutions, and/or examples and to score the response.

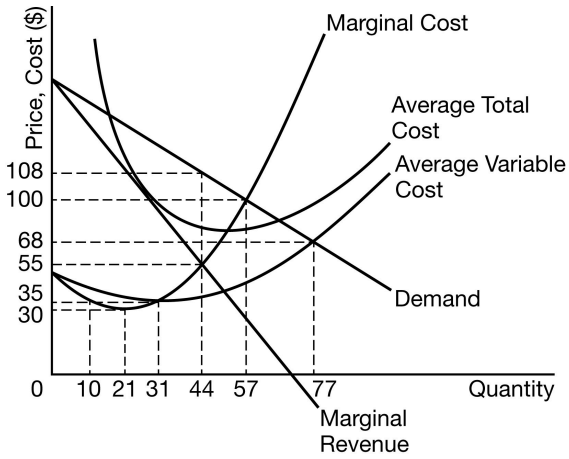
| 0 | 1 ✓ |
|---|---|

The response states that no, this offer will not result in a Nash equilibrium with different strategies and explains that the Nash equilibrium strategies will still be for BetterCook to maintain its price and for Scheff to not advertise with payoffs of (600,250) because if BetterCook chooses to lower its price, its payoff will decrease from $600 to 250$ $(200+50)$ and if Scheff chooses to advertise its payoff will decrease from $250 to 150$; therefore, there is no incentive for either firm to change its strategy. Or explains that with the offer BetterCook's dominant strategy will continue to be to maintain the price because its payoff will always be higher ($400 > 350$ and $600 > 250$), and since Scheff has no dominant strategy, it is better off to not advertise ($250 > 150$); therefore, there is no incentive for either firm to change its strategy.

# Unit 2 Practice Questions - ALL

**91. Include correctly labeled diagrams, if useful or required, in explaining your answers. A correctly labeled diagram must have all axes and curves clearly labeled and must show directional changes. If the question prompts you to "Calculate," you must show how you arrived at your final answer.**

Use the graph provided below to answer parts (a)-(e).




BigMed, a profit-maximizing firm, has a patent on a medical device, making it the only producer of that device. The graph above shows BigMed's demand, marginal revenue, average total cost, average variable cost, and marginal cost curves.

(a) Calculate BigMed's total revenue if the firm produces the allocatively efficient quantity. Show your work.

(b) Starting at a price of $100, if BigMed were to increase the price by 2%, will the quantity demanded decrease by more than 2%, by less than 2%, or by exactly 2%? Explain.

(c) At a quantity of 10 units, is BigMed's marginal product increasing, decreasing, or constant? Explain.

(d) Identify the quantity that maximizes BigMed's profit. Explain.

(e) At the quantity identified in part (d), does BigMed earn a positive economic profit, a negative economic profit, or zero economic profit? Explain.

Assume that BigMed's patent expires. Tauem, a company with the capability to produce the same medical device as BigMed, intends to enter the market and charge a lower price than BigMed for the medical device. BigMed is considering whether to maintain its price or to lower its price to match Tauem's price. Tauem is considering whether to advertise its entry into the market.

The matrix below shows the payoffs for each combination of strategies, and both players (BigMed and Tauem) have complete information. The first entry in each cell represents BigMed's payoff and the second entry represents Tauem's payoff. Each player independently and simultaneously chooses its strategy. Use the matrix provided below to answer parts (f)-(h).

| | | Tauem | |
|---|---|---|---|
| | | Advertise | Not Advertise |
| BigMed | Maintain Price | 300,850 | 200,640 |
| | Lower Price | 420,350 | 100,250 |

(f) Does Tauem have a dominant strategy? Explain using numbers from the payoff matrix.

(g) Identify the Nash equilibrium. Explain why this is a Nash equilibrium using information from the payoff matrix.

(h) Suppose Tauem makes a credible commitment to BigMed that if BigMed maintains its price, then Tauem will pay BigMed $200. Will this offer result in a Nash equilibrium with different strategies from those identified in part (g) ? Explain using numbers from the payoff matrix.

Respond to all parts of the question.

**Part A**

Select a point value to view scoring criteria, solutions, and/or examples and to score the response.

| 0 | 1 ✓ |
|---|---|

The response calculates BigMed's total revenue at the allocatively efficient quantity as $5,700 and shows the work.

$\text{Total Revenue} = \text{Price} \times \text{Quantity} = \$100 \times 57 = \$5{,}700$

**Part B**

Select a point value to view scoring criteria, solutions, and/or examples and to score the response.

# Unit 2 Practice Questions - ALL

| 0 | ✓ 1 |
|---|---|

The response states that the quantity demanded will decrease by more than 2% and explains that the demand is elastic in this price range because marginal revenue is positive.

**Part C**

Select a point value to view scoring criteria, solutions, and/or examples and to score the response.

| 0 | ✓ 1 |
|---|---|

The response states that at a quantity of 10 units BigMed's marginal product is increasing and explains that the marginal cost is falling.

**Part D**

Select a point value to view scoring criteria, solutions, and/or examples and to score the response.

| 0 | ✓ 1 |
|---|---|

The response identifies that the firm's profit-maximizing quantity as 44 units and explains that at that quantity marginal revenue is equal to marginal cost.

**Part E**

Select a point value to view scoring criteria, solutions, and/or examples and to score the response.

| 0 | ✓ 1 |
|---|---|

The response states that the firm earns a positive economic profit and explains that the firm's average total cost curve is below the demand curve, or the firm charges a price above the average total cost, or $P > ATC$ .

**Part F**

Select a point value to view scoring criteria, solutions, and/or examples and to score the response.

| 0 | ✓ 1 |
|---|---|

The response states that yes, Tauem has a dominant strategy and explains that Tauem's payoff is always higher when it chooses to advertise ($\$850 > \$640$ and $\$350 > \$250$) regardless of whether BigMed chooses to maintain or lower its price; or explain that when BigMed chooses to maintain its price, Tauem's payoff is higher when it chooses to advertise ($\$850 > \$640$), and when BigMed chooses to lower its price, Tauem's payoff is higher when it chooses to advertise ($\$350 > \$250$); therefore, Tauem's dominant strategy is to advertise.

**Part G**

Select a point value to view scoring criteria, solutions, and/or examples and to score the response.

| 0 | ✓ 1 |
|---|---|

The response identifies the Nash equilibrium as BigMed lowers its price and Tauem advertises with payoffs of $(\$420, \$350)$ and explains that if BigMed chooses to maintain its price, its payoff will decrease from $420 to 300$, and if Tauem chooses to not advertise, its payoff will decrease from $350 to 250$; therefore, there is no incentive for either firm to change its strategy.

**Part H**

# Unit 2 Practice Questions - ALL

Select a point value to view scoring criteria, solutions, and/or examples and to score the response.

| 0 | 1 ✓ |
|---|---|

The response states that yes, this offer will result in a Nash equilibrium with different strategies and explains that the new strategies will be for BigMed to maintain its price and Taueum to advertise with payoffs of ($500, $650) because with the offer BigMed would earn $500 (= $300 + $200 ) when choosing to maintain the price compared to $420 (with lower price) and Tauem would earn $650 (= $850 − $200) when choosing to advertise compared to $440 (= $640 − $200 with not advertising). Or explain that with the offer BigMed will now have a dominant strategy to maintain the price because its payoff will always be higher ($500 > $420 and $400 > $100) and Tauem's dominant strategy will continue to be to advertise ($650 > $440 and $350 > $250); therefore, there is no incentive for either firm to change its strategy.

**92.** If the price elasticity of supply for pickles is 2 and the price of pickles increases by 10 percent, then the quantity supplied of pickles will increase by

(A) 0.2%
(B) 5%
(C) 8%
(D) 12%
(E) 20% ✓

**Answer E**

Correct. The price elasticity of supply is defined as the percentage change in the quantity supplied of a good divided by the percentage change in the price of the good. Given the value for the elasticity and the percentage change in the price, the resulting percentage change in the quantity supplied can be determined as follows: percentage change in quantity supplied = (elasticity of supply × the percentage change in price) = (2 × 10%) = 20%.

**93.** If a 10 percent increase in the price of a good leads to a 25 percent decrease in the quantity demanded of the good, demand is

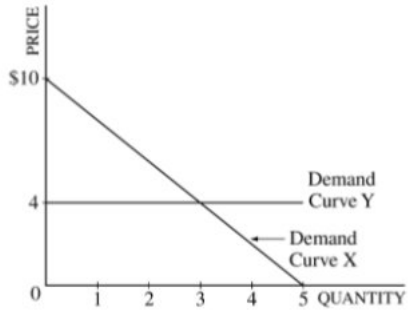
(A) relatively inelastic
(B) relatively elastic ✓
(C) unit elastic
(D) perfectly elastic
(E) perfectly inelastic

**94.** Moving from left to right along a downward- sloping linear demand curve, price elasticity varies in which of the following ways?

(A) First unit elastic, then inelastic throughout
(B) First unit elastic, then elastic throughout
(C) First inelastic, then unit elastic throughout
(D) First elastic, then unit elastic, and finally inelastic ✓
(E) First inelastic, then unit elastic, and finally elastic

# Unit 2 Practice Questions - ALL

**95.**




The demand curves X and Y are shown in the graph above.

Which of the following offers the most accurate comparison of the price elasticities of demand curves X and Y at a price of $4?

(A)

| Demand Curve X | Demand Curve Y |
|---|---|
| Perfectly elastic | Perfectly inelastic |

(B)

| Demand Curve X | Demand Curve Y |
|---|---|
| Perfectly inelastic | Perfectly elastic |

(C)

| Demand Curve X | Demand Curve Y |
|---|---|
| Perfectly inelastic | Relatively elastic |

(D) ✓

| Demand Curve X | Demand Curve Y |
|---|---|
| Relatively inelastic | Perfectly elastic |

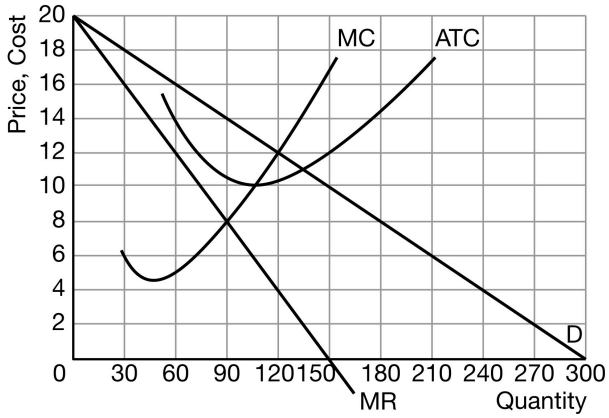
(E)

| Demand Curve X | Demand Curve Y |
|---|---|
| Relatively elastic | Relatively inelastic |

# Unit 2 Practice Questions - ALL

**96. Include correctly labeled diagrams, if useful or required, in explaining your answers. A correctly labeled diagram must have all axes and curves clearly labeled and must show directional changes. If the question prompts you to "Calculate," you must show how you arrived at your final answer.**

Use the following graph to answer parts (a)-(e). Prices and costs are in dollars.




The graph above shows the demand ($D$), marginal revenue ($MR$), marginal cost ($MC$), and average total cost ($ATC$) curves for one of many profit-maximizing firms operating in the short run in an industry in which there are no barriers to entry. Each firm sells a similar but not identical product.

(a) What will happen to total revenue if the firm raises the price from $\$12$ to $\$16$? Explain.

(b) At $120$ units, is the firm producing at the allocatively efficient quantity? Explain.

(c) If the firm produces $90$ units, will the firm's economic profit be positive, negative, or zero? Explain.

(d) Use the relationship between the marginal cost curve and the average total cost curve to explain why the average total cost curve is decreasing at $60$ units.

(e) Calculate the consumer surplus if the firm charges the profit-maximizing price. Show your work.

Respond to all parts of the question.

**Part A**

Select a point value to view scoring criteria, solutions, and/or examples and to score the response.

| 0 | 1 ✓ |
|---|---|

The response states that total revenue will decrease and explains that demand is price elastic in this price range; or uses numbers to explain that the percentage decrease in quantity demanded is greater than the percentage increase in price, the absolute value of the price elasticity of demand is greater than 1, or the total revenue decreases.

**Part B**

Select a point value to view scoring criteria, solutions, and/or examples and to score the response.

| 0 | 1 ✓ |
|---|---|

The response states that yes, the firm is producing at the allocatively efficient quantity and explains that allocative efficiency is achieved when the marginal cost to producers equals the marginal benefit to consumers, which occurs where the demand curve intersects the marginal cost curve (at 120 units).

**Part C**

Select a point value to view scoring criteria, solutions, and/or examples and to score the response.

| 0 | 1 ✓ |
|---|---|

The response states that at 90 units the firm's economic profit is positive and explains that the price is above the ATC.

**Part D**

# Unit 2 Practice Questions - ALL

Select a point value to view scoring criteria, solutions, and/or examples and to score the response.

| 0 | 1 ✓ |
|---|---|

The response explains that at 60 units marginal cost is less than average total cost, which means that the cost of producing the next unit is lower than the average total cost, which pulls down the average total cost for the next unit.

**Part E**

Select a point value to view scoring criteria, solutions, and/or examples and to score the response.

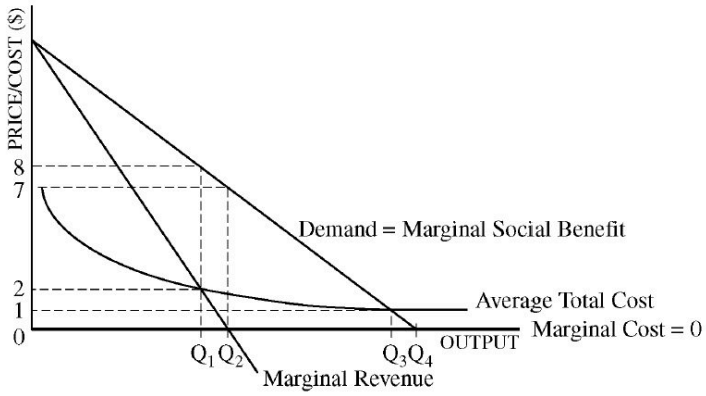
| 0 | 1 ✓ |
|---|---|

The response calculates the consumer surplus as $270 and shows the work:

$\text{Consumer Surplus} = \frac{1}{2}(90)(\$20 - \$14) = \$270$

# Unit 2 Practice Questions - ALL

**97.**




The diagram above shows the cost and revenue curves for a bridge to a popular island. The marginal cost of crossing the bridge is zero and is indicated in the diagram as the horizontal axis. The price is the toll to cross the bridge, and the output is the number of autos that cross the bridge each day.

a. Assume that a private firm owns the bridge and maximizes profits. Based on the diagram, determine each of the following.

i. Output

ii. Price

b. Now assume that a municipality owns the bridge and sets the price to achieve allocative efficiency. Based on the diagram, determine each of the following.

i. Output

ii. Price

c. At a price of $1, is the municipality's accounting profit positive, negative, or zero? Explain.

d. Suppose that the municipality sets a break-even price that generates revenues to just cover all economic costs.

i. Based on the diagram, determine the break-even output.

ii. At the output you determined in part (d)(i), is the demand relatively elastic, relatively inelastic, unit elastic, perfectly elastic, or perfectly inelastic?

e. If a company begins to provide access to the island via commercial watercraft, what will happen to each of the following in the diagram?

i. The demand curve for bridge crossings

ii. The profit-maximizing output

f. Suppose the long-run average total cost is strictly downward sloping. Would it be efficient to build a second bridge? Explain.

Respond to all parts of the question.

**Part A**

2 points:

- One point is earned for identifying the output as $Q_2$.
- One point is earned for identifying the price as $7.

| 0 | 1 | 2 ✓ |
|---|---|---|

Student receives 2/2 point(s)

2 points:

- One point is earned for identifying the output as $Q_2$.
- One point is earned for identifying the price as $7.

**Part B**

2 points:

- One point is earned for identifying the output as $Q_4$.

# Unit 2 Practice Questions - ALL

- One point is earned for identifying the price as $0.

| 0 | 1 | 2 ✓ |
|---|---|---|

Student receives 2/2 point(s)

2 points:

- One point is earned for identifying the output as $Q_4$.
- One point is earned for identifying the price as $0.

**Part C**

1 point:

- One point is earned for stating that the accounting profit is positive, because the firm earns zero economic profit. (Economic profit = Total revenue - Explicit costs - Implicit costs.)

| 0 | 1 ✓ |
|---|---|

Student receives 1/1 point(s)

1 point:

- One point is earned for stating that the accounting profit is positive, because the firm earns zero economic profit. (Economic profit = Total revenue - Explicit costs - Implicit costs.)

**Part D**

2 points:

- One point is earned for identifying the break-even quantity as $Q_3$.
- One point is earned for stating that the demand at $Q_3$ is relatively inelastic.

| 0 | 1 | 2 ✓ |
|---|---|---|

Student receives 2/2 point(s)

2 points:

- One point is earned for identifying the break-even quantity as $Q_3$.
- One point is earned for stating that the demand at $Q_3$ is relatively inelastic.

**Part E**

2 points:

- One point is earned for stating that the demand curve for bridge crossings will shift down or to the left.
- One point is earned for stating that the profit-maximizing output will fall.

| 0 | 1 | 2 ✓ |
|---|---|---|

Student receives 2/2 point(s)

2 points:

- One point is earned for stating that the demand curve for bridge crossings will shift down or to the left.

# Unit 2 Practice Questions - ALL

- One point is earned for stating that the profit-maximizing output will fall.

**Part F**

1 point:

- One point is earned for stating that building a second bridge would be inefficient and for explaining that, because there are economies of scale, building a second bridge would raise the average total cost.

| 0 | 1 ✓ |
|---|---|

Student receives 1/1 point(s)

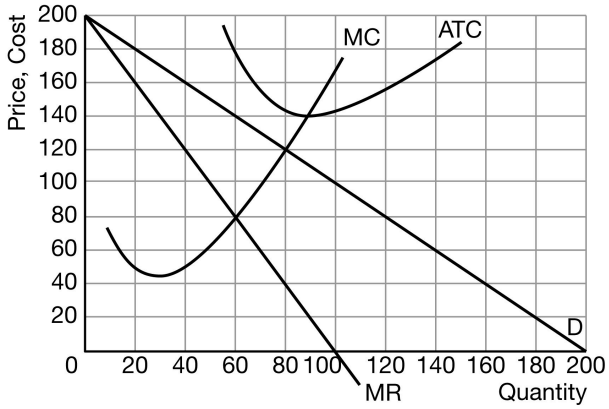
1 point:

- One point is earned for stating that building a second bridge would be inefficient and for explaining that, because there are economies of scale, building a second bridge would raise the average total cost.

# Unit 2 Practice Questions - ALL

**98. Include correctly labeled diagrams, if useful or required, in explaining your answers. A correctly labeled diagram must have all axes and curves clearly labeled and must show directional changes. If the question prompts you to "Calculate," you must show how you arrived at your final answer.**

Use the following graph to answer parts (a)-(e). Prices and costs are in dollars.




The graph above shows the demand ($D$), marginal revenue ($MR$), marginal cost ($MC$), and average total cost ($ATC$) curves for one of many profit-maximizing firms operating in the short run in an industry in which there are no barriers to entry. Each firm sells a similar but not identical product.

(a) Calculate the total revenue of producing 40 units. Show your work.

(b) For quantities between 160 and 180 units, is the demand curve elastic, inelastic, or unit elastic? Explain.

(c) Assume that this firm is currently charging a price of $100. In order to maximize its profit, should the firm increase its price, decrease its price, or keep its price the same? Explain.

(d) At a quantity of 20 units, does this firm have increasing marginal returns or diminishing marginal returns? Explain.

(e) Identify the firm's allocatively efficient quantity, and explain how you determined it.

Respond to all parts of the question.

**Part A**

Select a point value to view scoring criteria, solutions, and/or examples and to score the response.

| 0 | 1 ✓ |
|---|---|

The response calculates the total revenue of producing 40 units as $6400 and shows the work.

$\text{Total Revenue} = \text{Price} \times \text{Quantity} = \$160 \times 40 = \$6{,}400$

**Part B**

Select a point value to view scoring criteria, solutions, and/or examples and to score the response.

| 0 | 1 ✓ |
|---|---|

The response states that the demand curve is inelastic for quantities between 160 and 180 units and explains that the marginal revenue is negative; or uses numbers to explain that total revenue is falling as the price declines in that quantity range, the percentage change in quantity demanded is less than the percentage change in price, or the absolute value of the price elasticity of demand is less than 1.

**Part C**

Select a point value to view scoring criteria, solutions, and/or examples and to score the response.

| 0 | 1 ✓ |
|---|---|

The response states that the firm should increase its price and explains that at a price of $100 the marginal cost is greater than the marginal revenue or explains that the profit-maximizing price is 140 (this is the price from the demand curve for the profit-

# Unit 2 Practice Questions - ALL

maximizing quantity of 60 units where marginal cost is equal to marginal revenue).

**Part D**

Select a point value to view scoring criteria, solutions, and/or examples and to score the response.

| 0 | 1 ✓ |
|---|---|

The response states that the firm has increasing marginal returns and explains that marginal cost is falling at the quantity of 20 units, indicating that the marginal product is rising.

**Part E**

Select a point value to view scoring criteria, solutions, and/or examples and to score the response.

| 0 | 1 ✓ |
|---|---|

The response identifies that the allocatively efficient quantity is 80 units and explains that allocative efficiency is achieved when the marginal cost to producers equals the marginal benefit to consumers, which occurs where the demand curve intersects the marginal cost curve.

**99.** Which of the following statements about the price elasticity of demand is true?

(A) When demand is price inelastic, total revenue will decrease as price increases.
(B) When demand is price elastic, an increase in price will increase total revenue.
(C) Demand tends to be more elastic in the short run compared to the long run.
(D) As more close substitutes become available, demand tends to be more price elastic. ✓
(E) As a good becomes viewed as a necessity, demand becomes more price elastic.

**Answer D**

Correct. With more close substitutes, demand becomes more price elastic because buyers are more sensitive to price changes. A slight increase in a good's price will induce the buyers to go for its substitutes.

# Unit 2 Practice Questions - ALL

**100.** *Directions: You are advised to spend the first 10 minutes reading all of the questions and planning your answers. You will then have 50 minutes to answer all three of the following questions. You may begin writing your responses before the reading period is over. It is suggested that you spend approximately half your time on the first question and divide the remaining time equally between the next two questions. Include correctly labeled diagrams, if useful or required, in explaining your answers. A correctly labeled diagram must have all axes and curves clearly labeled and must show directional changes. Use a pen with black or dark blue ink.*

*The markets for bananas, muffins, and coffee are interrelated, and each market is perfectly competitive.*

a. *In the market for bananas, the equilibrium price is* $1.00 per pound, and the equilibrium quantity is 1,000 pounds per week. Suppose the government imposes a price floor on bananas at $1.20 per pound, causing the quantity supplied to increase to 1,500 pounds per week.

i. Would the price floor result in a shortage, a surplus, or neither? Explain.

ii. Calculate the price elasticity of supply if the price increases from $1 to $1.20. Show your work.

iii. Between $1 and $1.20, is the supply elastic, unit elastic, or inelastic? Explain.

b. Bananas are an input for muffins.

i. Draw a correctly labeled graph of the market for muffins indicating the equilibrium price and quantity, labeled $P_0$ and $Q_0$, respectively.

ii. On the graph drawn in part (b)(i), show the impact of an increase in the price of bananas on the muffin market, labeling the new equilibrium price and quantity $P_1$ and $Q_1$, respectively.

iii. On the same graph, completely shade the area that represents the **change** in the consumer surplus caused by the increase in the price of bananas.

c. In the market for coffee, the equilibrium price is $3.00 per cup and the equilibrium quantity is 100 cups per week. The cross-price elasticity of coffee with respect to muffins is −2.

i. Are coffee and muffins normal goods, inferior goods, complementary goods, or substitute goods?

ii. Assume the supply of coffee is perfectly elastic. Using the equilibrium price and quantity given above, draw a correctly labeled graph for the coffee market, and show the impact of an increase in the price of muffins on the coffee market.

iii. Given the original quantity of 100 cups of coffee per week, if the increase in the price of muffins is 10%, calculate the new equilibrium quantity in the coffee market. Show your work.

Respond to all parts of the question.

**Part A**

**1 point is earned for:** stating that the quantity supplied exceeds the quantity demanded at the price floor **or** the price floor would result in a surplus because the price floor is binding or effective.

**1 point is earned for:** correctly calculating the price elasticity of supply.Students can use either the mid-point formula or the point elasticity formula.

E = (500/1250)/ (0.2/1.1) = 2.2

E = (50%/20%)= 2.5E= (500/0.2) ×(1/1000) = 2.5

E = [(1500–1000)/1000]/[(1.2–1)/1]= 0.5/0.2 = 2.5

E = (500/0.2) x (1.2/1500) = 2

**1 point is earned for:** stating that the supply is elastic and for explaining that the **percentage** change in quantity supplied exceeds the **percentage** change in price or because price elasticity of supply is greater than one. (Other equivalent explanations are accepted.)

| 0 | 1 | 2 | 3 ✓ |
|---|---|---|---|

The student response earns all of the following points:

**1 point is earned for:** stating that the quantity supplied exceeds the quantity demanded at the price floor **or** the price floor would result in a surplus because the price floor is binding or effective.

**1 point is earned for:** correctly calculating the price elasticity of supply.Students can use either the mid-point formula or the point elasticity formula.

E = (500/1250)/ (0.2/1.1) = 2.2

E = (50%/20%)= 2.5E= (500/0.2) ×(1/1000) = 2.5

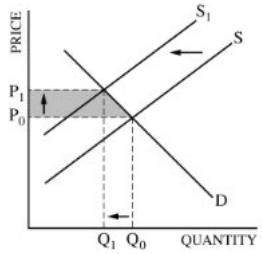
E = [(1500–1000)/1000]/[(1.2–1)/1]= 0.5/0.2 = 2.5

E = (500/0.2) x (1.2/1500) = 2

# Unit 2 Practice Questions - ALL

**1 point is earned for:** stating that the supply is elastic and for explaining that the **percentage** change in quantity supplied exceeds the **percentage** change in price or because price elasticity of supply is greater than one. (Other equivalent explanations are accepted.)

**Part B**



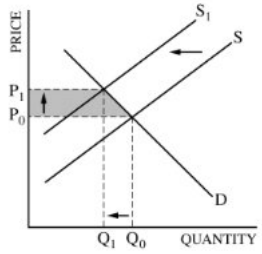

**1 point is earned for:** drawing a correctly labeled graph and for showing the equilibrium price and quantity, labeled P0 and Q0, respectively.

**1 point is earned for:** shifting the supply curve to the left and for showing the new equilibrium price and quantity, labeled P1 and Q1, respectively.

**1 point is earned for:** completely shading on the graph the area representing the change in consumer surplus.

| 0 | 1 | 2 | 3 ✓ |
|---|---|---|---|

The student response earns all of the following points:



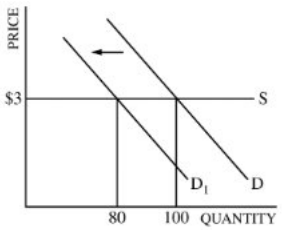

**1 point is earned for:** drawing a correctly labeled graph and for showing the equilibrium price and quantity, labeled P0 and Q0, respectively.

**1 point is earned for:** shifting the supply curve to the left and for showing the new equilibrium price and quantity, labeled P1 and Q1, respectively.

**1 point is earned for:** completely shading on the graph the area representing the change in consumer surplus.

**Part C**

**1 point is earned for:** stating that coffee and muffins are complementary goods.




**1 point is earned for:** drawing a correctly labeled graph for the coffee market and showing a horizontal supply curve(S)and a downward sloping demand curve(D).

**1 point is earned for:** shifting the demand curve to the left and for showing a decrease in the equilibrium quantity and no change in the equilibrium price of coffee.

**1 point is earned for:** correctly calculating the new equilibrium quantity and showing the work.

$\%\Delta Q = (10\% \times -2) = -20\%$
New Equilibrium Quantity = $100 \times (-20\%) = 80$
OR
New Equilibrium Quantity = $100 - (0.2 \times 100) = 80$

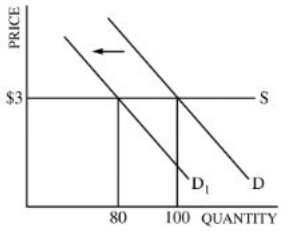
# Unit 2 Practice Questions - ALL

(Using the midpoint formula is also acceptable.)

| 0 | 1 | 2 | 3 | 4 ✓ |
|---|---|---|---|---|

The student response earns all of the following points:

**1 point is earned for:** stating that coffee and muffins are complementary goods.




**1 point is earned for:** drawing a correctly labeled graph for the coffee market and showing a horizontal supply curve(S)and a downward sloping demand curve(D).

**1 point is earned for:** shifting the demand curve to the left and for showing a decrease in the equilibrium quantity and no change in the equilibrium price of coffee.

**1 point is earned for:** correctly calculating the new equilibrium quantity and showing the work.

$\%\Delta Q = (10\% \times -2) = -20\%$
New Equilibrium Quantity = $100 \times (-20\%) = 80$
OR
New Equilibrium Quantity = $100 - (0.2 \times 100) = 80$

(Using the midpoint formula is also acceptable.)

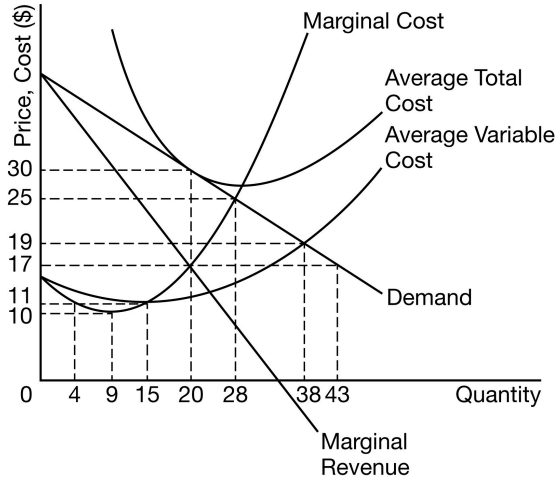
**101.** If a severe drought destroys a significant portion of the peanut crop and peanut farmers' revenues increase, which of the following is true over the observed range of prices?

(A) The demand for peanuts must be unit elastic.
(B) The demand for peanuts must be price elastic.
(C) The demand for peanuts must be price inelastic. ✓
(D) The supply of peanuts must be price inelastic.
(E) The supply of peanuts must be price elastic.

# Unit 2 Practice Questions - ALL

**102.** ***Include correctly labeled diagrams, if useful or required, in explaining your answers. A correctly labeled diagram must have all axes and curves clearly labeled and must show directional changes. If the question prompts you to "Calculate," you must show how you arrived at your final answer.***

Use the graph provided below to answer parts (a)-(e).




EarthScience, a profit-maximizing firm, has a patent on a carbon capture technology, making it the only producer of that technology. The graph above shows EarthScience's demand, marginal revenue, average total cost, average variable cost, and marginal cost curves.

(a) Calculate EarthScience's total revenue if the firm produces the allocatively efficient quantity. Show your work.

(b) Starting at a price of $30, if EarthScience were to increase the price by 6%, will the quantity demanded decrease by more than 6%, by less than 6%, or by exactly 6%? Explain.

(c) At a quantity of 20 units, is EarthScience's marginal product increasing, decreasing, or constant? Explain.

(d) Identify the quantity that maximizes EarthScience's profit. Explain.

(e) At the quantity identified in part (d), does EarthScience earn a positive economic profit, a negative economic profit, or zero economic profit? Explain.

Assume that EarthScience's patent expires. GeoSci, a company with the capability to produce the same technology as EarthScience, intends to enter the market and charge a lower price than EarthScience for the technology. EarthScience is considering whether to maintain its price or to lower its price to match GeoSci's price. GeoSci is considering whether or not to advertise its entry into the market.

The matrix below shows the payoffs for each combination of strategies, and both players (EarthScience and GeoSci) have complete information. The first entry in each cell represents EarthScience's payoff and the second entry represents GeoSci's payoff. Each player independently and simultaneously chooses its strategy. Use the matrix provided below to answer parts (f)-(h).

| | | GeoSci | |
|---|---|---|---|
| | | Advertise | Not Advertise |
| EarthScience | Maintain Price | 520,460 | 400,250 |
| | Lower Price | 450,350 | 320,650 |

(f) Does EarthScience have a dominant strategy? Explain using numbers from the payoff matrix.

(g) Identify the Nash equilibrium. Explain why this is a Nash equilibrium using information from the payoff matrix.

(h) Suppose GeoSci makes a credible commitment to EarthScience that if EarthScience lowers its price, then GeoSci will pay EarthScience $150. Will this offer result in a Nash equilibrium with different strategies from those identified in part (g) ? Explain using numbers from the payoff matrix.

Respond to all parts of the question.

**Part A**

Select a point value to view scoring criteria, solutions, and/or examples and to score the response.

| 0 | 1 ✓ |
|---|---|

The response calculates EarthScience's total revenue at the allocatively efficient quantity as $700 and shows the work.

$\text{Total Revenue} = \text{Price} \times \text{Quantity} = \$25 \times 28 = \$700$

**Part B**

# Unit 2 Practice Questions - ALL

Select a point value to view scoring criteria, solutions, and/or examples and to score the response.

| 0 | ✓ 1 |
|---|---|

The response states that the quantity demanded will decrease by more than 6% and explains that the demand is elastic in this price range because marginal revenue is positive.

**Part C**

Select a point value to view scoring criteria, solutions, and/or examples and to score the response.

| 0 | ✓ 1 |
|---|---|

The response states that at a quantity of 20 units EarthScience's marginal product is decreasing and explains that the marginal cost is rising.

**Part D**

Select a point value to view scoring criteria, solutions, and/or examples and to score the response.

| 0 | ✓ 1 |
|---|---|

The response identifies that the firm's profit-maximizing quantity as 20 units and explains that at that quantity marginal revenue is equal to marginal cost.

**Part E**

Select a point value to view scoring criteria, solutions, and/or examples and to score the response.

| 0 | ✓ 1 |
|---|---|

The response states that the firm earns zero economic profit and explains that the firm's average total cost curve is tangent to the demand curve, or the firm charges a price equal to the average total cost, or $\mathrm{P} = \mathrm{ATC} = \$30$.

**Part F**

Select a point value to view scoring criteria, solutions, and/or examples and to score the response.

| 0 | ✓ 1 |
|---|---|

The response states that yes, EarthScience has a dominant strategy and explains that EarthScience's payoff is always higher when it chooses to maintain the price ( $\$520 > \$450$ and $\$400 > \$320$) regardless of whether GeoSci chooses to advertise or not; or explain that when GeoSci chooses to advertise, EarthScience's payoff is higher when it chooses to maintain its price ($\$520 > \$450$), and when GeoSci chooses to not advertise, EarthScience's payoff is higher when it chooses to maintain its price ($\$400 > \$320$); therefore, EarthScience's dominant strategy is to maintain its price.

**Part G**

Select a point value to view scoring criteria, solutions, and/or examples and to score the response.

| 0 | ✓ 1 |
|---|---|

The response identifies the Nash equilibrium Nash equilibrium as EarthScience maintains its price and GeoSci advertises with payoffs of $(\$520, \$460)$, and explains that if EarthScience chooses to lower its price its payoff will decrease from $520 to 450$ and if GeoSci chooses to not advertise its payoff will decrease from $460 to 250$; therefore, there is no incentive for either firm to change its strategy.

# Unit 2 Practice Questions - ALL

**Part H**

Select a point value to view scoring criteria, solutions, and/or examples and to score the response.

| 0 | 1 ✓ |
|---|---|

The response states that yes, this offer will result in a Nash equilibrium with different strategies and explains that the new strategies will be for EarthScience to lower its price and GeoSci to not advertise with payoffs of ($470, $500) because with the offer EarthScience would earn $470 ($320 + $150) when choosing to lower the price compared to $400 (*withmaintainingtheprice*)*andGeoSciwouldearn*500 (= $650 − $150) when choosing to advertise compared to $200 (= $350 − $150 with not advertising). Or explain that with the offer EarthScience's dominant strategy will change to lowering the price because its payoff will always be higher ($600 > $520 and $470 > $400), and since GeoSci has no dominant strategy, it is better off to not advertise ($500 > $200); therefore, there is no incentive for either firm to change its strategy.

# Unit 2 Practice Questions - ALL

**103.** In each part below, assume that the government imposes a per-unit sales tax and that the supply curve is upward-sloping.

a. In industry X, consumers buy the same quantity no matter what the price is.

i. Using a correctly labeled graph, show what happens to the quantity sold when the tax is imposed.

ii. How will the burden of the tax be distributed between buyers and sellers?

b. In industry Y, the market demand curve is perfectly elastic.

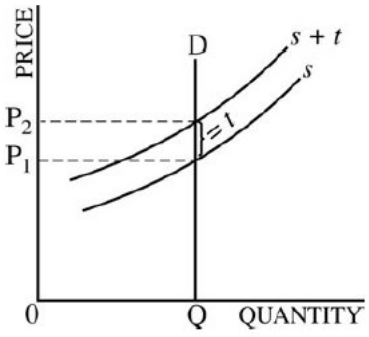
i. Using a correctly labeled graph, show what happens to the price of the good that the consumers pay when the tax is imposed.

ii. How will the burden of the tax be distributed between buyers and sellers?

c. In industry Z, the market demand curve is downward-sloping. Using a correctly labeled graph, shade the area that represents total tax revenues.

Respond to all parts of the question.

**Part A**

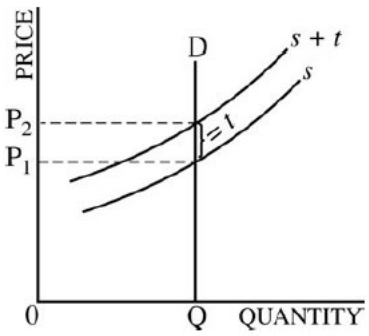



1 point - Perfectly inelastic demand curve showing that Q does not change

1 point - Since producers can raise the price by the full amount of the tax, the tax falls entirely on buyers

| 0 | 1 | 2 ✓ |
|---|---|---|

Student receives 2/2 point(s)

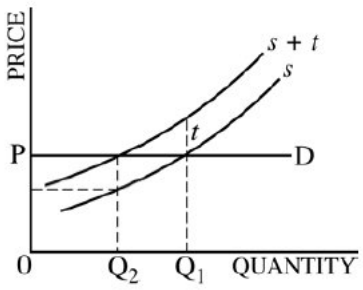



1 point - Perfectly inelastic demand curve showing that Q does not change

1 point - Since producers can raise the price by the full amount of the tax, the tax falls entirely on buyers

**Part B**

# Unit 2 Practice Questions - ALL

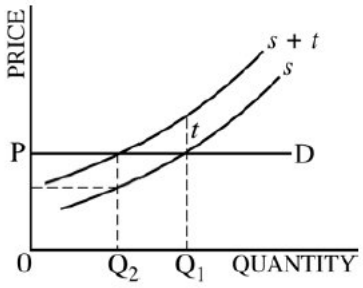



1 point – Horizontal demand curve showing that price does not change

1 point – The tax falls entirely on sellers, since they can't charge more and thus must absorb the entire amount of the tax

| 0 | 1 | 2 ✓ |
|---|---|---|

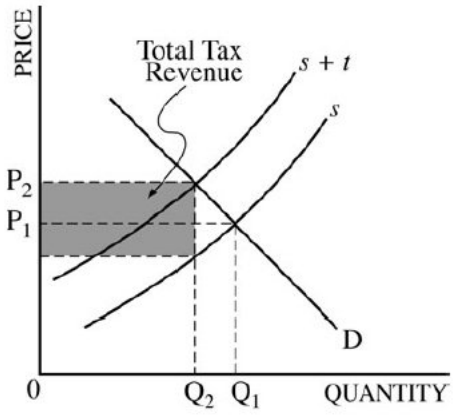
Student receives 2/2 point(s)




1 point – Horizontal demand curve showing that price does not change

1 point – The tax falls entirely on sellers, since they can't charge more and thus must absorb the entire amount of the tax

**Part C**



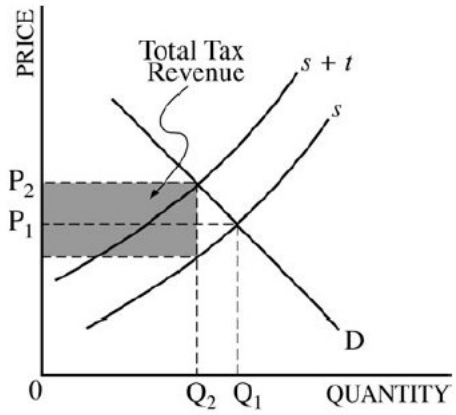

1 point - For shifting either the supply curve *or* the demand curve inward to the left

1 point - For shading the correct profits area

| 0 | 1 | 2 ✓ |
|---|---|---|

Student receives 2/2 point(s)

## Unit 2 Practice Questions - ALL




1 point - For shifting either the supply curve *or* the demand curve inward to the left

1 point - For shading the correct profits area

# Unit 2 Practice Questions - ALL

**104.** Which of the following relationships among the price elasticity of demand, change in price, and change in total revenue is consistent?

(A)

| Price Elasticity of Demand | Change in Price | Change in Total Revenue |
|---|---|---|
| Elastic | Increase | Increase |

(B)

| Price Elasticity of Demand | Change in Price | Change in Total Revenue |
|---|---|---|
| Elastic | Decrease | Decrease |

(C)

| Price Elasticity of Demand | Change in Price | Change in Total Revenue |
|---|---|---|
| Unit Elastic | Decrease | Decrease |

(D)

| Price Elasticity of Demand | Change in Price | Change in Total Revenue |
|---|---|---|
| Inelastic | Decrease | Increase |

(E) ✓

| Price Elasticity of Demand | Change in Price | Change in Total Revenue |
|---|---|---|
| Inelastic | Decrease | Decrease |

**Answer E**

Correct. When demand is inelastic, the price effect outweighs the quantity effect; that is, the percentage change in price exceeds the percentage change in quantity demanded. Thus, a decrease in price will result in a decrease in total revenue.

# Unit 2 Practice Questions - ALL

**105.** A 10 percent increase in the price of a good results in a 4 percent increase in total revenue. From this information, it can be concluded that the demand over this range of prices

(A) is upward sloping

(B) is inelastic ✓

(C) has a price elasticity of demand equal to 2.5

(D) has increased by 14%

(E) has increased by 40%

**Answer B**

Correct. The demand elasticity can be determined by applying the total revenue test because whether total revenue increases, decreases, or remains the same when price changes depends on the price elasticity of demand. Price and total revenue move in opposite directions if demand is elastic and move in the same direction if demand is inelastic. In this case, an increase in the price resulted in an increase in total revenue. Thus, demand must be inelastic. That is, the percentage increase in price outweighs the percentage decrease in quantity demanded, resulting in a net increase in total revenue

**106.** A firm estimates that the absolute value of the price elasticity of demand for its signature sandwich is 2. If the firm increases its sandwich price by 10 percent, what will happen to the quantity demanded?

(A) It will increase by 5 percent

(B) It will increase by 20 percent

(C) It will decrease by 5 percent

(D) It will decrease by 20 percent ✓

(E) It will remain unchanged

**Answer D**

Correct. The absolute value of the price elasticity of demand is 2 and is equal to the percentage change in quantity demanded divided by the percentage change in price. Therefore, the percentage change in quantity demanded will be 20% (this is calculated by multiplying the 2 by 10%). The price elasticity of demand illustrates the negative relationship between price and quantity demanded. Therefore, an increase in price by 10% will result in a decrease in quantity demanded by 20% for an absolute value of a price elasticity of demand of 2.

**107.** Assume that the price of orange juice increases by 40 percent following a crop failure. If the quantity demanded falls by 10 percent, which of the following is true?

(A) The demand for orange juice is elastic.

(B) The price of grapefruit juice, a substitute good, will fall.

(C) The absolute value of the price elasticity of demand for orange juice is 4.

(D) The absolute value of the price elasticity of demand for orange juice is 0.25. ✓

(E) The absolute value of the price elasticity of demand for orange juice is 10.

**Answer D**

Correct. The absolute value of the price elasticity of demand is 0.25 and is equal to the percentage change in quantity demanded divided by the percentage change in price, $\frac{10\%}{40\%}$, or 0.25.

# Unit 2 Practice Questions - ALL

**108.** The price elasticity of demand for a product is 0.5. If the price of the product increases by 20 percent, which of the following will occur?

(A) The quantity demanded of the good will increase by 10%.
(B) The quantity demanded of the good will increase by 20%.
(C) The quantity demanded of the good will increase by 40%.
(D) The quantity demanded of the good will decrease by 10%. ✓
(E) The quantity demanded of the good will decrease by 40%.

**Answer D**

Correct. The quantity demanded will decrease by 10 percent. The price elasticity of demand illustrates the negative relationship between price and quantity demanded and is equal to the percentage change in quantity demanded divided by the percentage change in price. Therefore, an increase in price by 20 percent will result in a decrease in quantity demanded by 10 percent for an absolute value of a price elasticity of demand of 0.5.

**109.** Assume a 10 percent increase in price increased the market quantity supplied by 20 percent. Which of the following is true?

(A) The value of the price elasticity of supply is 2. ✓
(B) The value of the price elasticity of supply is 0.5.
(C) Supply is price inelastic.
(D) Demand is price elastic.
(E) This price-quantity combination violates the law of supply.

**Answer A**

Correct. The price elasticity of supply measures the responsiveness of quantity supplied to a change in price and is calculated as the ratio of the percentage change in quantity supplied to the percentage change in price. The value of the price elasticity of supply is 2, which is calculated as 20 percent divided by 10 percent.

**110.** If the value of the price elasticity of supply is 3, which of the following is true?

(A) Supply is inelastic.
(B) A percentage increase in price will lead to a relatively smaller percentage increase in quantity supplied.
(C) The supply curve is downward sloping with respect to the price of output.
(D) A 10 percent decrease in price will decrease the quantity supplied by 30 percent. ✓
(E) A 3 percent increase in price will decrease the quantity supplied by 10 percent.

**Answer D**

Correct. The price elasticity of supply measures the responsiveness of quantity supplied to a change in price and is calculated as the ratio of the percentage change in quantity supplied to the percentage change in price. When the magnitude of the price elasticity of supply is 3, a 10 percent decrease in price will lead to a 30 percent decrease in quantity supplied.

**111.** Assume that the price elasticity of supply for good Y is 0.5. If the price of good Y decreases by 30 percent, the quantity supplied of good Y will

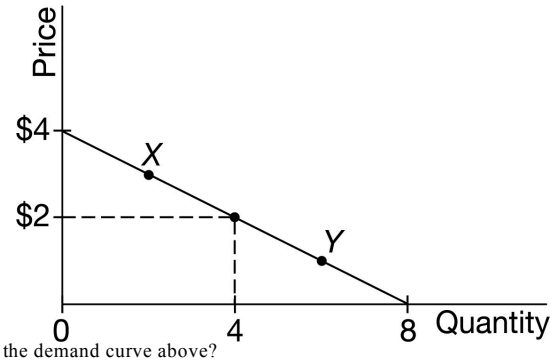
(A) decrease by 60 percent
(B) decrease by 30 percent
(C) decrease by 15 percent ✓
(D) increase by 0.5 percent
(E) increase by 0.15 percent

**Answer C**

Correct. The price elasticity of supply measures the responsiveness of quantity supplied to a change in price and is calculated as the ratio of the percentage change in quantity supplied to the percentage change in price. Therefore, the percentage change in quantity supplied can be obtained by multiplying the price elasticity of supply (0.5) by the percentage change in the price (30 percent), which equals 15 percent.

# Unit 2 Practice Questions - ALL

**112.**




Which of the following statements is true about the demand curve above?

(A) Demand is elastic at each given price because the slope is constant and equal to $-2$.

(B) The elasticity of demand decreases when moving from point X to point Y. ✓

(C) The elasticity of demand increases when moving from point X to point Y.

(D) Demand is inelastic between quantities 0 and 4.

(E) Demand is elastic between quantities 4 and 8.

**Answer B**

Correct. The price elasticity of demand decreases as price falls and quantity rises between point X and Y when moving down along the demand curve. That is, the demand becomes more inelastic along the linear demand curve as price decreases.

**113.** Which of the following combinations is most likely to result in the demand for a product being highly price inelastic?

(A) The product has few close substitutes and represents a small percentage of a consumer's income. ✓

(B) The product has few close substitutes and represents a large percentage of a consumer's income.

(C) The product has many close substitutes and represents a small percentage of a consumer's income.

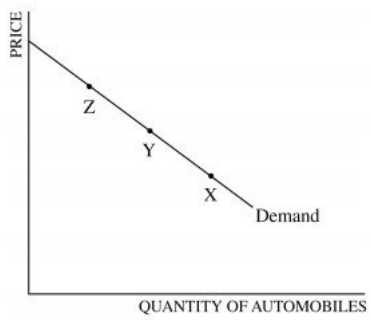
(D) The product has many close substitutes and represents a moderate percentage of a consumer's income.

(E) The product has many close substitutes and represents a large percentage of a consumer's income.

**Answer A**

Correct. The main determinants of the price elasticity of demand are the number of substitutes available and the percentage of a consumer's income the product represents. The fewer substitutes that are available for a product, all else equal, the more inelastic the demand for the product. Furthermore, the smaller the percentage of a consumer's income a product represents, all else equal, the more inelastic the demand for the product (since an increase in the price, for example, represents a relatively small impact on a consumer's income).

**114.**




In the figure above, at which of the given points is demand most elastic?

(A) X

(B) Y

(C) Z ✓

(D) The elasticity is the same for all points.

(E) The relative elasticity cannot be determined with the given information.

# Unit 2 Practice Questions - ALL

**115.** Include correctly labeled diagrams, if useful or required, in explaining your answers. A correctly labeled diagram must have all axes and curves clearly labeled and must show directional changes. If the question prompts you to "Calculate," you must show how you arrived at your final answer.

In the local market for Good X, there are four individual buyers: Emily, Wu, Omar, and Fernanda. The quantities that each individual buyer would be willing and able to purchase at different prices are included in the table provided.

| | Quantity of Good X | | | |
|---|---|---|---|---|
| **Price** | **Emily** | **Wu** | **Omar** | **Fernanda** |
| $1 | 5 | 4 | 4 | 3 |
| $2 | 4 | 3 | 4 | 3 |
| $3 | 4 | 3 | 3 | 2 |
| $4 | 3 | 2 | 3 | 2 |
| $5 | 3 | 2 | 2 | 1 |
| $6 | 2 | 1 | 2 | 1 |
| $7 | 2 | 1 | 1 | 0 |
| $8 | 1 | 0 | 1 | 0 |

(a) The local market for Good X has a perfectly elastic supply. Draw a correctly labeled graph for the local market for Good X with a market equilibrium price of $5. Label the equilibrium price as $5, and label the equilibrium quantity for the market with a specific value based on the data provided in the table.

(b) Assume the cost of production increases, which causes the price of Good X to increase from $5 to $7.

(i) Calculate the price elasticity of demand for Good X as the price increases from $5 to $7. Show your work.
(ii) Identify whether the demand for Good X is elastic, inelastic, or unit elastic in that range of prices.

(c) Could Emily's marginal benefit for the second unit of Good X equal $4.50? Explain.

Respond to all parts of the question.

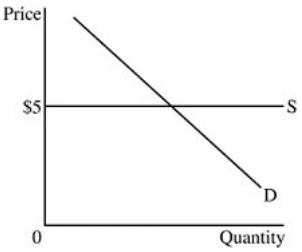
**Part A**

Select a point value to view scoring criteria, solutions, and/or examples and to score the response.

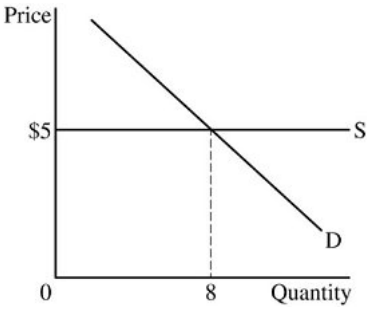
| 0 | 1 | 2 ✓ |
|---|---|---|

The response accurately includes two of the criteria below.

☐ Draws a correctly labeled graph of the market with a downward-sloping demand (D) curve and a perfectly elastic supply (S) curve at a price of $5.




☐ Shows the equilibrium quantity as 8 units.




**Part B**

Select a point value to view scoring criteria, solutions, and/or examples and to score the response.

The response must show appropriate work in order to receive the point.

# Unit 2 Practice Questions - ALL

| 0 | 1 | 2 ✓ |
|---|---|---|

The response accurately includes two of the criteria below.

- ☐ Calculates the magnitude of the price elasticity of demand as 1.25 and shows the work.
  $$\text{Price Elasticity of Demand} = \frac{\text{Percentage Change in Quantity Demanded}}{\text{Percentage Change in Price}}$$
  $$= \frac{\left|\left(\frac{4-8}{8}\right)\times 100\right|}{\left|\left(\frac{7-5}{5}\right)\times 100\right|} = \frac{50\%}{40\%} = 1.25 \text{ OR}$$
  $$= \frac{\left(\frac{4-8}{8}\right)\times 100}{\left(\frac{7-5}{5}\right)\times 100} = \frac{-50\%}{40\%} = -1.25$$
- ☐ States that demand is elastic.

**Part C**

Select a point value to view scoring criteria, solutions, and/or examples and to score the response.

| 0 | 1 ✓ |
|---|---|

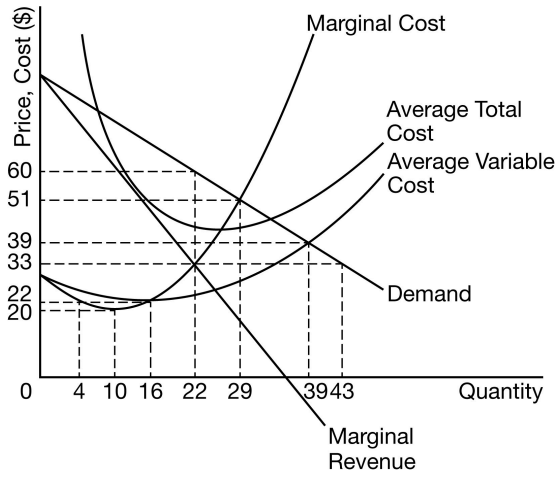
The response accurately includes the criterion below

- ☐ States no and explains that Emily's marginal benefit should be greater than or equal to the price she is willing to pay ($7) for the second unit.

# Unit 2 Practice Questions - ALL

**116. Include correctly labeled diagrams, if useful or required, in explaining your answers. A correctly labeled diagram must have all axes and curves clearly labeled and must show directional changes. If the question prompts you to "Calculate," you must show how you arrived at your final answer.**

Use the graph provided below to answer parts (a)-(e).




GarysGym, a profit-maximizing firm, has a patent on an exercise device, making it the only producer of that device. The graph above shows GarysGym's demand, marginal revenue, average total cost, average variable cost, and marginal cost curves.

(a) Calculate GarysGym's total revenue if the firm produces the allocatively efficient quantity. Show your work.

(b) Starting at a price of $39, if GarysGym were to decrease the price by 5%, will the quantity demanded increase by more than 5%, by less than 5%, or by exactly 5%? Explain.

(c) At a quantity of 16 units, is GarysGym's marginal product increasing, decreasing, or constant? Explain.

(d) Identify the quantity that maximizes GarysGym's profit. Explain.

(e) At the quantity identified in part (d), does GarysGym earn a positive economic profit, a negative economic profit, or zero economic profit? Explain.

Assume that GarysGym's patent expires. E-Fitness, a company with the capability to produce the same exercise device as GarysGym, intends to enter the market and charge a lower price than GarysGym for the exercise device. GarysGym is considering whether to maintain its price or to lower its price to match E-Fitness' price. E-Fitness is considering whether or not to advertise its entry into the market.

The matrix below shows the payoffs for each combination of strategies, and both players (GarysGym and E-Fitness) have complete information. The first entry in each cell represents GarysGym's payoff and the second entry represents E-Fitness' payoff. Each player independently and simultaneously chooses its strategy. Use the matrix provided below to answer parts (f)-(h).

| | | E-Fitness | |
|---|---|---|---|
| | | Advertise | Not Advertise |
| GarysGym | Maintain Price | 350,450 | 700,300 |
| | Lower Price | 580,500 | 460,200 |

(f) Does GarysGym have a dominant strategy? Explain using numbers from the payoff matrix.

(g) Identify the Nash equilibrium. Explain why this is a Nash equilibrium using information from the payoff matrix.

(h) Suppose GarysGym makes a credible commitment to E-Fitness that if E-Fitness does not advertise, then GarysGym will pay E-Fitness $100. Will this offer result in a Nash equilibrium with different strategies from those identified in part (g) ? Explain using numbers from the payoff matrix.

Respond to all parts of the question.

**Part A**

Select a point value to view scoring criteria, solutions, and/or examples and to score the response.

| 0 | 1 ✓ |
|---|---|

The response calculates GarysGym's total revenue at the allocatively efficient quantity as $1,479 and shows the work.

$$\text{Total Revenue} = \text{Price} \times \text{Quantity} = \$51 \times 29 = \$1,479$$

**Part B**

# Unit 2 Practice Questions - ALL

Select a point value to view scoring criteria, solutions, and/or examples and to score the response.

| 0 | 1 ✓ |
|---|---|

The response states that the quantity demanded will increase by less than 5% and explains that the demand is inelastic in this price range because marginal revenue is negative.

**Part C**

Select a point value to view scoring criteria, solutions, and/or examples and to score the response.

| 0 | 1 ✓ |
|---|---|

The response states that at a quantity of 16 units GarysGym's marginal product is decreasing and explains that the marginal cost is rising.

**Part D**

Select a point value to view scoring criteria, solutions, and/or examples and to score the response.

| 0 | 1 ✓ |
|---|---|

The response identifies that the firm's profit-maximizing quantity as 22 units and explains that at that quantity marginal revenue is equal to marginal cost.

**Part E**

Select a point value to view scoring criteria, solutions, and/or examples and to score the response.

| 0 | 1 ✓ |
|---|---|

The response states that the firm earns positive economic profit and explains that the firm's average total cost curve is below the demand curve, or the firm charges a price above the average total cost, or $\mathrm{P} > \mathrm{ATC}$.

**Part F**

Select a point value to view scoring criteria, solutions, and/or examples and to score the response.

| 0 | 1 ✓ |
|---|---|

The response states that no, GarysGym does not have a dominant strategy and explains that when E-Fitness chooses to advertise, GarysGym's payoff is higher when it chooses to lower the price ($\$580 > \$350$), and when E-Fitness chooses to not advertise, GarysGym's payoff is higher when it chooses to maintain the price ($\$700 > \$460$); therefore, GarysGym does not have a dominant strategy.

**Part G**

Select a point value to view scoring criteria, solutions, and/or examples and to score the response.

| 0 | 1 ✓ |
|---|---|

The response identifies the Nash equilibrium as GarysGym lowers its price and E-Fitness advertises $(\$580, \$500)$, and explains that if GarysGym chooses to maintain its price, its payoff will decrease from $580 to 350$, and if E-Fitness chooses to not advertise, its payoff will decrease from $500 to 200$; therefore, there is no incentive for either firm to change its strategy.

# Unit 2 Practice Questions - ALL

**Part H**

Select a point value to view scoring criteria, solutions, and/or examples and to score the response.

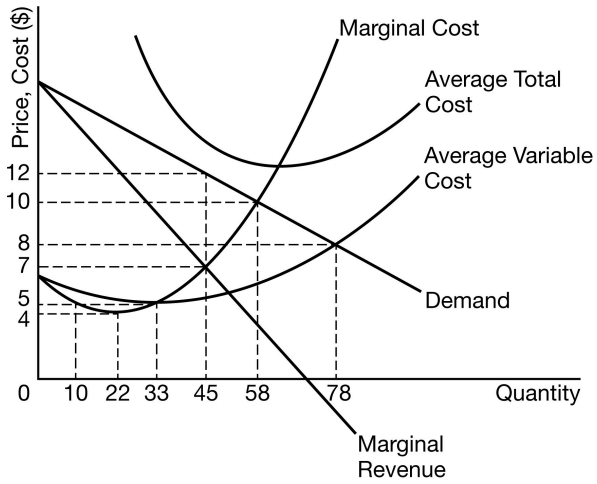
| 0 | 1 ✓ |
|---|---|

The response states that no, this offer will not result in a Nash equilibrium with different strategies and explains that the Nash equilibrium strategies will still be for GarysGym to lower its price and E-Fitness to advertise $(\$580, \$500)$ because if GarysGym chooses to maintain its price, its payoff will decrease from $580 to 350$, and if E-Fitness chooses to not advertise, its payoff will decrease from $500 to 300$ $(\$200 + \$100)$; therefore, there is no incentive for either firm to change its strategy. Or explain that with the offer E-Fitness' dominant strategy will continue to be to advertise because its payoff will always be higher ($\$450 > \$400$ and $\$500 > \$300$), and since GarysGym has no dominant strategy, it is better off to lower its price ($\$580 > \$350$); therefore, there is no incentive for either firm to change its strategy.

# Unit 2 Practice Questions - ALL

**117.** ***Include correctly labeled diagrams, if useful or required, in explaining your answers. A correctly labeled diagram must have all axes and curves clearly labeled and must show directional changes. If the question prompts you to "Calculate," you must show how you arrived at your final answer.***

Use the graph provided below to answer parts (a)-(e).




GaterTools, a profit-maximizing firm, has a patent on a power tool, making it the only producer of that power tool. The graph above shows GaterTools' demand, marginal revenue, average total cost, average variable cost, and marginal cost curves.

(a) Calculate GaterTools' total revenue if the firm produces the allocatively efficient quantity. Show your work.

(b) Starting at a price of $12, if GaterTools were to increase the price by 4%, will the quantity demanded decrease by more than 4%, less than 4%, or exactly 4%? Explain.

(c) At a quantity of 10 units, is GaterTools' marginal product increasing, decreasing, or constant? Explain.

(d) Identify the quantity that maximizes GaterTools' profit. Explain.

(e) At the quantity identified in part (d), does GaterTools earn a positive economic profit, a negative economic profit, or zero economic profit? Explain.

Assume that GaterTools' patent expires. HandyBilt, a company with the capability to produce the same power tool as GaterTools, intends to enter the market and charge a lower price than GaterTools for the power tool. GaterTools is considering whether to maintain its price or to lower its price to match HandyBilt's price. HandyBilt is considering whether to advertise its entry into the market.

The matrix below shows the payoffs for each combination of strategies, and both players (GaterTools and HandyBilt) have complete information. The first entry in each cell represents GaterTools' payoff and the second entry represents HandyBilt's payoff. Each player independently and simultaneously chooses its strategy. Use the matrix provided below to answer parts (f)-(h).

| | | HandyBilt | |
|---|---|---|---|
| | | Advertise | Not Advertise |
| GaterTools | Maintain Price | 200,850 | 300,250 |
| | Lower Price | 420,400 | 520,440 |

(f) Does GaterTools have a dominant strategy? Explain using numbers from the payoff matrix.

(g) Identify the Nash equilibrium. Explain why this is a Nash equilibrium using information from the payoff matrix.

(h) Suppose HandyBilt makes a credible commitment to GaterTools that if GaterTools maintains its price, then HandyBilt will pay GaterTools $250. Will this offer result in a Nash equilibrium with different strategies from those identified in part (g) ? Explain using numbers from the payoff matrix.

Respond to all parts of the question.

**Part A**

Select a point value to view scoring criteria, solutions, and/or examples and to score the response.

| 0 | 1 ✓ |
|---|---|

The response calculates GaterTools' total revenue at the allocatively efficient quantity as $580 and shows the work.

$\text{Total Revenue} = \text{Price} \times \text{Quantity} = \$10 \times 58 = \$580$

**Part B**

# Unit 2 Practice Questions - ALL

Select a point value to view scoring criteria, solutions, and/or examples and to score the response.

| 0 | 1 ✓ |
|---|---|

The response states that the quantity demanded will decrease by more than 4% and explains that the demand is elastic in this price range because marginal revenue is positive.

**Part C**

Select a point value to view scoring criteria, solutions, and/or examples and to score the response.

| 0 | 1 ✓ |
|---|---|

The response states that at a quantity of 10 units GaterTools' marginal product is increasing and explains that the marginal cost is falling.

**Part D**

Select a point value to view scoring criteria, solutions, and/or examples and to score the response.

| 0 | 1 ✓ |
|---|---|

The response identifies that the firm's profit-maximizing quantity as 45 units and explains that at that quantity marginal revenue is equal to marginal cost.

**Part E**

Select a point value to view scoring criteria, solutions, and/or examples and to score the response.

| 0 | 1 ✓ |
|---|---|

The response states that the firm earns a positive economic profit and explains that the firm's average total cost curve is above the demand curve, or the firm charges a price that is less than the average total cost, or $\mathrm{P} < \mathrm{ATC}$.

**Part F**

Select a point value to view scoring criteria, solutions, and/or examples and to score the response.

| 0 | 1 ✓ |
|---|---|

The response states that yes, GaterTools has a dominant strategy to lower the price and explains that GaterTools' payoff is always higher when it lowers its price ( $\$420 > \$200$ and $\$520 > \$300$ ) regardless of whether HandyBilt chooses to advertise or not.

Or explains that when HandyBilt chooses to advertise, GaterTools' payoff is higher when it chooses to lower its price $(\$420 > \$200)$, and when HandyBilt chooses to not advertise, GaterTools' payoff is higher when it chooses to lower the price $(\$520 > \$300)$; therefore, GaterTools' dominant strategy is to lower its price.

**Part G**

Select a point value to view scoring criteria, solutions, and/or examples and to score the response.

| 0 | 1 ✓ |
|---|---|

The response identifies the Nash equilibrium as GaterTools lowers its price and HandyBilt does not advertise with payoffs of $(\$520\ ,\ \$440)$, and explains that if GaterTools chooses to maintain its price its payoff will decrease from $520 to 300$ and if HandyBilt chooses to advertise its payoff will decrease from $440 to 400$; therefore, there is no incentive for either firm to change its strategy.

# Unit 2 Practice Questions - ALL

**Part H**

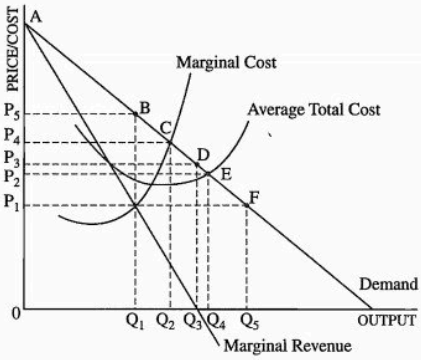
Select a point value to view scoring criteria, solutions, and/or examples and to score the response.

| 0 | 1 ✓ |
|---|---|

The response states that yes, this offer will result in a Nash equilibrium with different strategies and explains that the new strategies will be for GaterTools to maintain its price and HandyBilt to advertise with payoffs of $(\$450$ , $\$600)$ because with the offer GaterTools would earn $\$450$ $(=\$200 + \$250)$ when maintaining the price compared to $420(withlowerprice)andHandyBiltwouldearn600$ $(=\$850 - \$200)$ when choosing to advertise compared to $\$0$ $(=\$250 - \$250$ with not advertising). Or explains that with the offer GaterTools' dominant strategy will change to maintaining the price because its payoff will always be higher ($\$450 > \$420$ and $\$550 > \$520$) and since HandyBilt has no dominant strategy it is better off to advertise $(\$600 > \$0)$; therefore, there is no incentive for either firm to change its strategy.

# Unit 2 Practice Questions - ALL

**118.** In answering the question, you should emphasize the line of reasoning that generated your results; it is not enough to list the results of your analysis. Include correctly labeled diagrams, if useful or required, in explaining your answers. A correctly labeled diagram must have all axes and curves clearly labeled and must show directional changes.




The diagram above shows the cost and revenue curves for a monopoly.

a. How does a monopolist determine its profit-maximizing level of output and price?

b. Using the information in the graph, identify each of the following for the monopolist.

i. The profit-maximizing level of output and price

ii. The line segment of the demand curve that is elastic

c. Suppose that the industry depicted in the graph became perfectly competitive without changing the demand or cost curves. Identify the equilibrium price and output that would prevail in the perfectly competitive market.

d. Using the information in the graph, identify the area of consumer surplus for each of the following.

i. The profit-maximizing monopoly

ii. The perfectly competitive industry

e. Define allocative efficiency.

f. To be allocatively efficient, what level of output should the monopolist produce?

g. Should the government use a per-unit tax or a per-unit subsidy to lead the monopolist to produce the allocatively efficient level of output? Explain how this tax or subsidy would achieve the allocatively efficient level of output.

Respond to all parts of the question.

**Part A**

**2 Points**

- 1 point (i) MR=MC for output
- 1 point (ii) P from demand curve

| 0 | 1 | 2 ✓ |
|---|---|---|

The student earns all of the following points:

- **1 point** (i) MR=MC for output
- **1 point** (ii) P from demand curve

**Part B**

**2 Points**

- **1 point** (i) $Q_1$ and $P_5$ (or Point B)
- **1 point** (ii) A to D (or range for which MR > 0)

It is not necessary for them to acknowledge that D technically shouldn't be included in this line segment.

# Unit 2 Practice Questions - ALL

While other line segments (AB, AC, BC, BD, CD) are elastic, they include only a portion of the line segment that elastic and should not be given credit.

| 0 | 1 | 2 ✓ |
|---|---|---|

The student earns all of the following points:

- **1 point** (i) $Q_1$ and $P_5$ (or Point B)
- **1 point** (ii) A to D (or range for which MR > 0)

It is not necessary for them to acknowledge that D technically shouldn't be included in this line segment.

While other line segments (AB, AC, BC, BD, CD) are elastic, they include only a portion of the line segment that elastic and should not be given credit.

**Part C**

**1 Point**

- **1 point** $Q_2$ and $P_4$ (or point C)

| 0 | 1 ✓ |
|---|---|

The student earns all of the following points:

- **1 point** $Q_2$ and $P_4$ (or point C)

**Part D**

**2 Points**

- **1 point** (i) $ABP_5$ (monopoly)

If the answer to (d)(i) is incorrect but consistent with the student's answer in (b), credit should be given.

- **1 point** (ii) $ACP_4$ (perfect competition)

Again, there is a consistency problem; if the answer to (ii) is incorrect but is consistent with the (incorrect) answer the student gave in part (c), credit should be given.

| 0 | 1 | 2 ✓ |
|---|---|---|

The student earns all of the following points:

- **1 point** (i) $ABP_5$ (monopoly)

If the answer to (d)(i) is incorrect but consistent with the student's answer in (b), credit should be given.

- **1 point** (ii) $ACP_4$ (perfect competition)

Again, there is a consistency problem; if the answer to (ii) is incorrect but is consistent with the (incorrect) answer the student gave in part (c), credit should be given.

**Part E**

**1 Point**

- **1 point** P = MC, or MB = MC

This definition is entirely self-contained; there need be no reference to the graph to get full credit.

| 0 | 1 ✓ |
|---|---|

The student earns all of the following points:

# Unit 2 Practice Questions - ALL

- **1 point** P = MC, or MB = MC

This definition is entirely self-contained; there need be no reference to the graph to get full credit.

**Part F**

**1 Point**

- **1 point** $Q_2$

If this answer is incorrect, the student receives no credit *even if it is consistent with part (e)*

| 0 | ✓ 1 |
|---|---|

The student earns all of the following points:

- **1 point** $Q_2$

If this answer is incorrect, the student receives no credit *even if it is consistent with part (e)*

**Part G**

**2 Points**

- **1 point:** (i)A per-unit subsidy. Merely the word "subsidy" is sufficient.
- **1 point:** (ii)An explanation that the subsidy either
    1. lowers MC, or
    2. raises MR, or
    3. shifts the demand curve out

A statement that output increases is not sufficient.

| 0 | 1 | ✓ 2 |
|---|---|---|

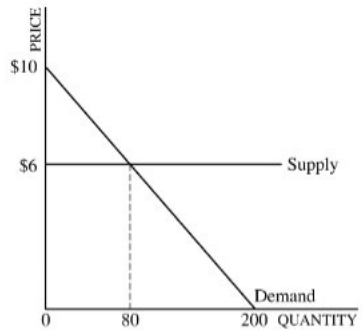
The student earns all of the following points:

- **1 point:** (i)A per-unit subsidy. Merely the word "subsidy" is sufficient.
- **1 point:** (ii)An explanation that the subsidy either
    1. lowers MC, or
    2. raises MR, or
    3. shifts the demand curve out

A statement that output increases is not sufficient.

# Unit 2 Practice Questions - ALL

**119.** The market supply and demand for a product are shown in the diagram below.




Respond to all parts of the question.

a. Is the price elasticity of supply less than one, equal to one, or greater than one? Explain.

b. Calculate consumer surplus at the equilibrium price. Show your work.

c. Now suppose the government imposes a per-unit tax of $1 on producers.

i. What happens to total revenue received by producers after they pay the tax to the government? Explain.

ii. Will producer surplus increase, decrease, or stay the same?

iii. Will total surplus increase, decrease, or stay the same? Explain.

**Part A**

**1 point is earned for:** stating that the price elasticity of supply is greater than one and for explaining that the supply curve is horizontal **OR** the price elasticity of supply is infinite **OR** the supply is perfectly elastic.

| 0 | 1 ✓ |
|---|---|

The student response earns all of the following points:

**1 point is earned for:** stating that the price elasticity of supply is greater than one and for explaining that the supply curve is horizontal **OR** the price elasticity of supply is infinite **OR** the supply is perfectly elastic.

**Part B**

**1 point is earned for:** correctly calculating the consumer surplus and showing the work as $1/2 \times 80 \times 4 = 160$.

| 0 | 1 ✓ |
|---|---|

The student response earns all of the following points:

**1 point is earned for:** correctly calculating the consumer surplus and showing the work as $1/2 \times 80 \times 4 = 160$.

**Part C**

**1 point is earned for:** stating that the total revenue will decrease and explaining that the quantity will decrease **OR** the percentage change of quantity demanded is greater than the percentage change in price **OR** demand is elastic in this price range.

**1 point is earned for:** stating that producer surplus will stay the same **OR** remain zero.

**1 point is earned for:** stating that total surplus will decrease and for explaining that the quantity decreases **OR** there is now deadweight loss after the tax is imposed **OR** the consumer surplus decreases by more than what is transferred to the government and producer surplus stays the same.

| 0 | 1 | 2 | 3 ✓ |
|---|---|---|---|

# Unit 2 Practice Questions - ALL

The student response earns all of the following points:

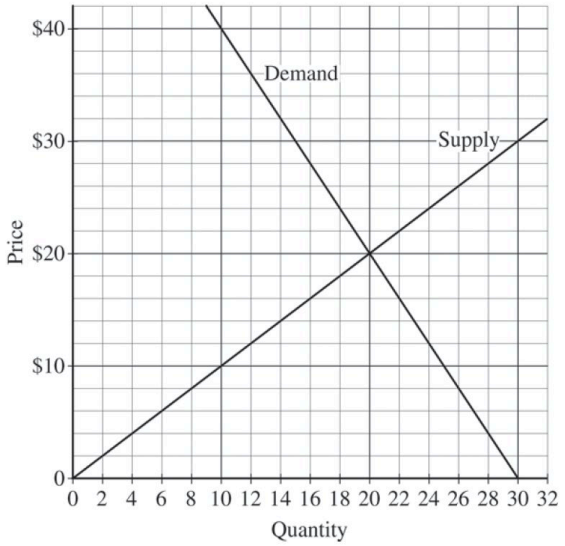
**1 point is earned for:** stating that the total revenue will decrease and explaining that the quantity will decrease **OR** the percentage change of quantity demanded is greater than the percentage change in price **OR** demand is elastic in this price range.

**1 point is earned for:** stating that producer surplus will stay the same **OR** remain zero.

**1 point is earned for:** stating that total surplus will decrease and for explaining that the quantity decreases **OR** there is now deadweight loss after the tax is imposed **OR** the consumer surplus decreases by more than what is transferred to the government and producer surplus stays the same.

# Unit 2 Practice Questions - ALL

**120.** The graph below shows the market for widgets. The government is considering intervening in this market.




a. Calculate the total producer surplus at the market equilibrium price and quantity. Show your work.

b. If the government imposes a price floor at $16, is there a shortage, a surplus, or neither? Explain.

c. If instead the government imposes a price ceiling at $12, is there a shortage, a surplus, or neither? Explain.

d. If instead the government restricts the market output to 10 units, calculate the deadweight loss. Show your work.

e. Assume the price decreases from $20 to 12$.

i. Calculate the price elasticity of demand. Show your work.

ii. In this price range, is demand perfectly elastic, relatively elastic, unit elastic, relatively inelastic, or perfectly inelastic?

Respond to all parts of the question.

**Part A**

1 point:

- One point is earned for calculating the total producer surplus as (1/2 × 20 × 20) = $200.

| 0 | 1 ✓ |
|---|---|

Student receives 1/1 point(s)

1 point:

- One point is earned for calculating the total producer surplus as (1/2 × 20 × 20) = $200.

**Part B**

1 point:

- One point is earned for stating that imposing a price floor at $16 is ineffective and will not create a surplus or a shortage in the market because it is set below the equilibrium price, or because it is not binding.

| 0 | 1 ✓ |
|---|---|

Student receives 1/1 point(s)

1 point:

# Unit 2 Practice Questions - ALL

- One point is earned for stating that imposing a price floor at $16 is ineffective and will not create a surplus or a shortage in the market because it is set below the equilibrium price, or because it is not binding.

**Part C**

1 point:

- One point is earned for stating that imposing a price ceiling at $12 will create a shortage because quantity demanded is greater than quantity supplied, or because the price ceiling is binding.

| 0 | ✓ 1 |
|---|---|

Student receives 1/1 point(s)

1 point:

- One point is earned for stating that imposing a price ceiling at $12 will create a shortage because quantity demanded is greater than quantity supplied, or because the price ceiling is binding.

**Part D**

1 point:

- One point is earned for calculating the deadweight loss as $150 and for showing:

  $(1/2 \times 30 \times 10)$

  or

  $(1/2 \times 10 \times 10) + (1/2 \times 20 \times 10)$

  or

  $50+100$

| 0 | ✓ 1 |
|---|---|

Student receives 1/1 point(s)

1 point:

- One point is earned for calculating the deadweight loss as $150 and for showing:

  $(1/2 \times 30 \times 10)$

  or

  $(1/2 \times 10 \times 10) + (1/2 \times 20 \times 10)$

  or

  $50+100$

**Part E**

2 points:

- One point is earned for calculating the price elasticity of demand as $[(24-20)/20 / (12-20)/20] = -0.5$, or for correctly using the midpoint formula.
- One point is earned for stating that in this price range the demand is relatively inelastic.

| 0 | 1 | ✓ 2 |
|---|---|---|

Student receives 2/2 point(s)

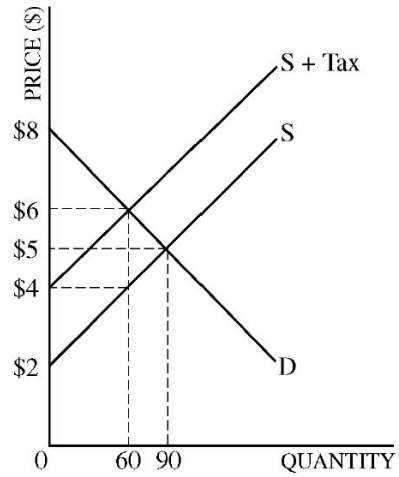
# Unit 2 Practice Questions - ALL

2 points:

- One point is earned for calculating the price elasticity of demand as [(24−20)/20 / (12−20)/20] = −0.5, or for correctly using the midpoint formula.
- One point is earned for stating that in this price range the demand is relatively inelastic.

# Unit 2 Practice Questions - ALL

**121.**




The graph above illustrates the market for calculators. S denotes the current supply curve, and D denotes the demand curve.

a. Calculate the producer surplus before the tax.

b. Now assume a per-unit tax of $2 is imposed whose impact is shown in the graph above.

i. Calculate the amount of tax revenue.

ii. What is the after-tax price that the sellers now keep?

iii. Calculate the producer surplus after the tax.

c. Is the demand price elastic, inelastic, or unit elastic between the prices of $5 and 6$ ? Explain.

d. Assuming no externalities, how does the tax affect allocative efficiency? Explain.

Respond to all parts of the question.

**Part A**

1 point:

- One point is earned for the correct calculation of the producer surplus: $(1/2) \times 3 \times 90 = 135$.

| 0 | 1 ✓ |
|---|---|

Student receives 1/1 point(s)

1 point:

- One point is earned for the correct calculation of the producer surplus: $(1/2) \times 3 \times 90 = 135$.

**Part B**

3 points:

- One point is earned for the correct calculation of the amount of tax revenue: $2 \times 60 = 120$.
- One point is earned for the correct calculation of the after-tax price received by sellers: $4.
- One point is earned for the correct calculation of the producer surplus: $(1/2) \times 2 \times 60 = 60$.

| 0 | 1 | 2 | 3 ✓ |
|---|---|---|---|

Student receives 3/3 point(s)

3 points:

# Unit 2 Practice Questions - ALL

- One point is earned for the correct calculation of the amount of tax revenue: $2 \times 60 = 120$.
- One point is earned for the correct calculation of the after-tax price received by sellers: $4.
- One point is earned for the correct calculation of the producer surplus: $(1/2) \times 2 \times 60 = 60$.

**Part C**

1 point:

- One point is earned for concluding that the demand price is elastic AND showing the correct calculation of the elasticity coefficient using endpoint or midpoint method, or the correct calculation using the total revenue formula.

| 0 | 1 ✓ |
|---|---|

Student receives 1/1 point(s)

1 point:

- One point is earned for concluding that the demand price is elastic AND showing the correct calculation of the elasticity coefficient using endpoint or midpoint method, or the correct calculation using the total revenue formula.

**Part D**

1 point:

- One point is earned for concluding that, owing to the tax, the market is no longer allocatively efficient AND that total surplus decreases or the tax creates a dead-weight loss.

| 0 | 1 ✓ |
|---|---|

Student receives 1/1 point(s)

1 point:

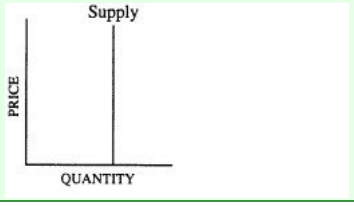
- One point is earned for concluding that, owing to the tax, the market is no longer allocatively efficient AND that total surplus decreases or the tax creates a dead-weight loss.

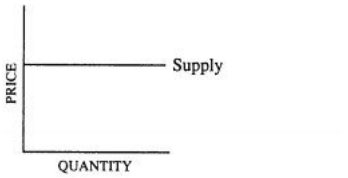
**122.** If a 5 percent wage increase in a particular labor market results in a 10 percent decrease in employment, the demand for labor is

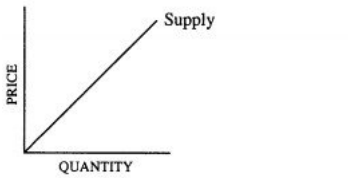
(A) perfectly elastic
(B) relatively elastic ✓
(C) unit elastic
(D) relatively inelastic
(E) perfectly inelastic

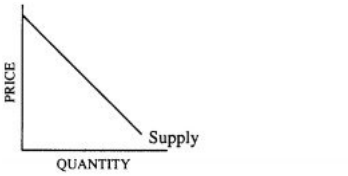
# Unit 2 Practice Questions - ALL

**123.** If a one-of-a-kind Etruscan vase is offered for sale at an auction, which, if any, of the following correctly shows the supply curve for the vase?

(A) 


(B) 


(C) 


(D) 


(E) It is impossible to determine the shape of the supply curve from the given information.

**124.** If a store raises its prices by 20 percent and its total revenue increases by 10 percent, the demand it faces in this price range must be

(A) inelastic
(B) elastic
(C) unit elastic
(D) perfectly elastic
(E) perfectly inelastic

**125.** If the demand for insulin is price inelastic, a 5 percent increase in the price of insulin will

(A) have no effect on the total revenue of insulin producers
(B) increase the total revenue of insulin producers
(C) decrease the total revenue of insulin producers
(D) decrease the total spending on insulin by consumers
(E) cause the demand for insulin to be less elastic

**126.** If the demand for product X is perfectly elastic and the supply of product X decreases, which of the following will occur in the market for X ?

(A) Total revenue will increase.
(B) Total revenue will decrease.
(C) Total revenue will remain the same.
(D) Quantity demanded will exceed quantity supplied.
(E) Quantity supplied will exceed quantity demanded.

**127.** Suppose that the demand for vegetables is price elastic. If the price of vegetables increases by 5 percent, the quantity of vegetables demanded would

(A) increase by 5 percent
(B) increase by more than 5 percent
(C) increase by less than 5 percent
(D) decrease by more than 5 percent
(E) decrease by less than 5 percent

# Unit 2 Practice Questions - ALL

**128.** To alleviate a financial crisis, a university increases student fees. This action will increase university revenues if the price elasticity of demand for university education is

(A) inelastic ✓

(B) unit elastic

(C) elastic

(D) equal to the price elasticity of supply

(E) equal to one

**129.** In which of the following cases would a firm's total revenue increase?

(A) Price increases and demand is elastic.

(B) Price decreases and supply is inelastic.

(C) Price decreases and demand is elastic. ✓

(D) Price decreases and supply is elastic.

(E) Price decreases and demand is inelastic.

# Unit 2 Practice Questions - ALL

**130.** Respond to all parts of the question.

Joyce owns a gas station and monopolizes gas sales along a remote stretch of road. In February, Joyce stayed open even though she earned negative economic profits.

a. Draw a correctly labeled graph for Joyce's gas station during February and show each of the following.

i. The profit-maximizing output and price, labeled $Q_J$ and $P_J$

ii. The average total cost curve, labeled ATC

iii. Deadweight loss, completely shaded

b. What must have been true for Joyce to continue operating during the month of February even though she earned negative economic profit?

c. Assume that fixed costs for Joyce's gas station decrease. Would Joyce's profit-maximizing quantity increase, decrease, or stay the same in February? Explain.

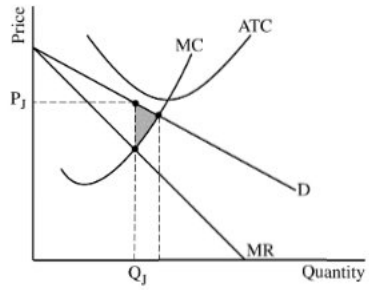
d. During the month of July, demand increases so that Joyce now earns a positive economic profit. However, she realizes her profits would have been higher if she had reduced the price of gasoline.

i. At the quantity sold in July, was marginal revenue greater than, equal to, or less than marginal cost?

ii. Would the price decrease cause quantity demanded to increase, decrease, or stay the same?

iii. Would the price decrease cause the total revenue to increase, decrease, or stay the same? Explain.

**Part A**




**1 point is earned for:** drawing a correctly labeled monopoly graph with a downward-sloping demand (D) curve and a marginal revenue (MR) curve below the demand curve.

**1 point is earned for:** showing the firm's average total cost (ATC) curve above the demand curve at QJ with the MC curve rising and passing through the minimum of the ATC curve.

**1 point is earned for:** identifying the firm's profit-maximizing quantity, QJ, at MC= MR.

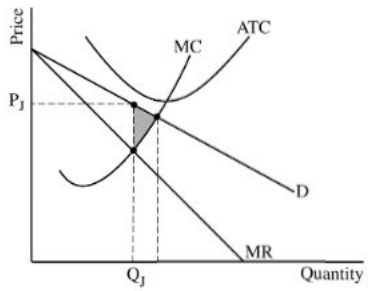
**1 point is earned for:** identifying the firm's profit-maximizing price, PJ, on the demand curve, above QJ.

**1 point is earned for:** showing the area representing the deadweight loss shaded completely.

**Note:** All quantities and prices should be labeled on the axes and connected to the intersection points by dashed lines.

| 0 | 1 | 2 | 3 | 4 | 5 ✓ |
|---|---|---|---|---|---|

The student response earns all of the following points:



# Unit 2 Practice Questions - ALL

**1 point is earned for:** drawing a correctly labeled monopoly graph with a downward-sloping demand (D) curve and a marginal revenue (MR) curve below the demand curve.

**1 point is earned for:** showing the firm's average total cost (ATC) curve above the demand curve at QJ with the MC curve rising and passing through the minimum of the ATC curve.

**1 point is earned for:** identifying the firm's profit-maximizing quantity, QJ, at MC= MR.

**1 point is earned for:** identifying the firm's profit-maximizing price, PJ, on the demand curve, above QJ.

**1 point is earned for:** showing the area representing the deadweight loss shaded completely.

**Note:** All quantities and prices should be labeled on the axes and connected to the intersection points by dashed lines.

**Part B**

**1 point is earned for:** stating that total revenue is greater than total variable cost or that AVC < PJ.

| 0 | 1 ✓ |
|---|---|

The student response earns all of the following points:

**1 point is earned for:** stating that total revenue is greater than total variable cost or that AVC < PJ.

**Part C**

**1 point is earned for:** stating that the profit-maximizing quantity will stay the same because a change in fixed costs does not affect marginal cost.

| 0 | 1 ✓ |
|---|---|

The student response earns all of the following points:

**1 point is earned for:** stating that the profit-maximizing quantity will stay the same because a change in fixed costs does not affect marginal cost.

**Part D**

**1 point is earned for:** stating that MR is greater than MC.

**1 point is earned for:** stating that the lower price would cause quantity demanded to increase.

**1 point is earned for:** stating that the lower price would cause total revenue to increase, and for explaining that the decrease in price occurs in the elastic region of the demand curve.

| 0 | 1 | 2 | 3 ✓ |
|---|---|---|---|

The student response earns all of the following points:

**1 point is earned for:** stating that MR is greater than MC.

**1 point is earned for:** stating that the lower price would cause quantity demanded to increase.

**1 point is earned for:** stating that the lower price would cause total revenue to increase, and for explaining that the decrease in price occurs in the elastic region of the demand curve.

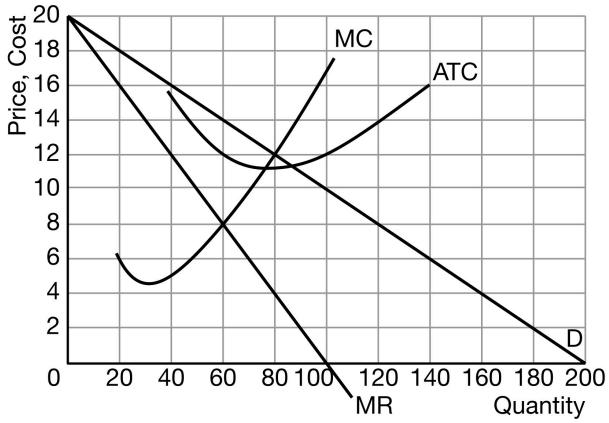
**131.** Which of the following is true in the elastic range of a firm's demand curve?

(A) The firm should expand output to increase economic profits.
(B) An increase in price will also lead to an increase in total cost.
(C) A decrease in price will likely lead to an increase in total revenue. ✓
(D) Marginal revenue is negative.
(E) The firm is maximizing total revenue.

# Unit 2 Practice Questions - ALL

**132.** ***Include correctly labeled diagrams, if useful or required, in explaining your answers. A correctly labeled diagram must have all axes and curves clearly labeled and must show directional changes. If the question prompts you to "Calculate," you must show how you arrived at your final answer.***

Use the following graph to answer parts (a)-(e). Prices and costs are in dollars.




The graph above shows the demand ($D$), marginal revenue ($MR$), marginal cost ($MC$), and average total cost ($ATC$) curves for one of many profit-maximizing firms operating in the short run in an industry in which there are no barriers to entry. Each firm sells a similar but not identical product.

(a) For prices between $\$8$ and $\$6$, is the demand curve elastic, inelastic, or unit elastic? Explain.

(b) To produce the allocatively efficient quantity, how many units of output would the firm produce? Explain.

(c) To maximize total revenue, how many units of output would the firm produce? Explain.

(d) Identify the firm's profit-maximizing quantity. Explain using marginal analysis.

(e) Calculate the firm's economic profit at the profit-maximizing quantity identified in part (d). Show your work.

Respond to all parts of the question.

**Part A**

Select a point value to view scoring criteria, solutions, and/or examples and to score the response.

| 0 | 1 ✓ |
|---|---|

The response states that the demand curve is inelastic between $8 and $6 and explains that the marginal revenue is negative; or uses numbers to explain that total revenue is falling in that price range, the percentage change in quantity is less than the percentage change in price, or the absolute value of the price elasticity of demand is less than 1.

**Part B**

Select a point value to view scoring criteria, solutions, and/or examples and to score the response.

| 0 | 1 ✓ |
|---|---|

The response states that the firm would produce 80 units of output at the allocatively efficient price and explains that at that quantity the marginal cost to producers equals the marginal benefit to consumers (where marginal cost crosses the demand curve).

**Part C**

Select a point value to view scoring criteria, solutions, and/or examples and to score the response.

| 0 | 1 ✓ |
|---|---|

The response states that the firm would produce 100 units of output to maximize total revenue and explains that at that quantity the marginal revenue is equal to zero, or uses numbers to explain that total revenue is maximized at that quantity of output.

**Part D**

# Unit 2 Practice Questions - ALL

Select a point value to view scoring criteria, solutions, and/or examples and to score the response.

| 0 | 1 ✓ |
|---|---|

The response identifies that the firm's profit-maximizing quantity is 60 units and explains that at that quantity marginal revenue is equal to marginal cost, or explains that when marginal revenue is higher than marginal cost the firm should increase production because each additional sale increases the firm's profit and when marginal cost is higher than marginal revenue the firm should decrease production because it costs more to produce the last unit than what the firm will earn from it.

**Part E**

Select a point value to view scoring criteria, solutions, and/or examples and to score the response.

| 0 | 1 ✓ |
|---|---|

The response calculates the economic profit as $120 and shows the work.

$$\text{Economic Profit} = \text{Total Revenue} - \text{Total Cost} = \$14 \times 60 = -\$12 \times 60 = \$120$$

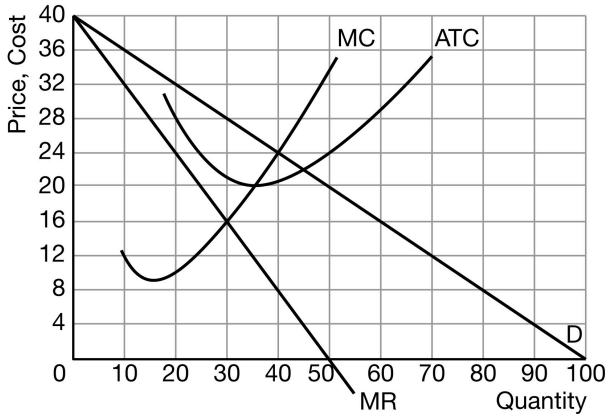
or

$$\text{Economic Profit} = (P - \text{ATC}) \times \text{Q} = (\$14 - \$12) \times 60 = \$120$$

# Unit 2 Practice Questions - ALL

**133. Include correctly labeled diagrams, if useful or required, in explaining your answers. A correctly labeled diagram must have all axes and curves clearly labeled and must show directional changes. If the question prompts you to "Calculate," you must show how you arrived at your final answer.**

Use the following graph to answer parts (a)-(e). Prices and costs are in dollars.




The graph above shows the demand ($D$), marginal revenue ($MR$), marginal cost ($MC$), and average total cost ($ATC$) curves for one of many profit-maximizing firms operating in the short run in an industry in which there are no barriers to entry. Each firm sells a similar but not identical product.

(a) What will happen to total revenue if the firm raises the price from $\$32$ to $\$36$? Explain.

(b) At $30$ units, is the firm producing at the allocatively efficient quantity? Explain.

(c) If the firm produces $40$ units, will the firm's economic profit be positive, negative, or zero? Explain.

(d) Use the relationship between the marginal cost curve and the average total cost curve to explain why the average total cost curve is decreasing at $20$ units.

(e) Calculate the consumer surplus if the firm charges the profit-maximizing price. Show your work.

Respond to all parts of the question.

**Part A**

Select a point value to view scoring criteria, solutions, and/or examples and to score the response.

| 0 | 1 ✓ |
|---|---|

The response states that total revenue will decrease and explains that demand is price elastic in this price range; or uses numbers to explain that the percentage decrease in quantity demanded is greater than the percentage increase in price, the absolute value of the price elasticity of demand is greater than 1, or the total revenue decreases.

**Part B**

Select a point value to view scoring criteria, solutions, and/or examples and to score the response.

| 0 | 1 ✓ |
|---|---|

The response states that no, the firm is not producing at the allocatively efficient quantity and explains that allocative efficiency is achieved when the marginal cost to producers equals the marginal benefit to consumers, which occurs where the demand curve intersects the marginal cost curve (at 40 units).

**Part C**

Select a point value to view scoring criteria, solutions, and/or examples and to score the response.

| 0 | 1 ✓ |
|---|---|

The response states that at 40 units the firm's economic profit is positive and explains that the price is above the ATC.

**Part D**

# Unit 2 Practice Questions - ALL

Select a point value to view scoring criteria, solutions, and/or examples and to score the response.

| 0 | 1 ✓ |
|---|---|

The response explains that at 20 units marginal cost is less than average total cost, which means that the cost of producing the next unit is lower than the average total cost, which pulls down the average total cost for the next unit.

**Part E**

Select a point value to view scoring criteria, solutions, and/or examples and to score the response.

| 0 | 1 ✓ |
|---|---|

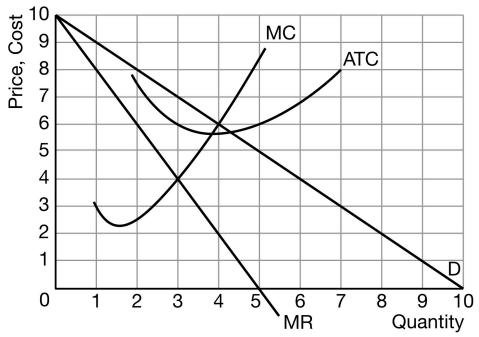
The response calculates the consumer surplus as $180 and shows the work:

$\text{Consumer Surplus} = \frac{1}{2}(30)(\$40 - \$28) = \$180$

# Unit 2 Practice Questions - ALL

**134. Include correctly labeled diagrams, if useful or required, in explaining your answers. A correctly labeled diagram must have all axes and curves clearly labeled and must show directional changes. If the question prompts you to "Calculate," you must show how you arrived at your final answer.**

Use the following graph to answer parts (a)-(e). Prices and costs are in dollars.




The graph above shows the demand ($D$), marginal revenue ($MR$), marginal cost ($MC$), and average total cost ($ATC$) curves for one of many profit-maximizing firms operating in the short run in an industry in which there are no barriers to entry. Each firm sells a similar but not identical product.

(a) For prices between $\$3$ and $\$2$, is the demand curve elastic, inelastic, or unit elastic? Explain.

(b) To produce the allocatively efficient quantity, how many units of output would the firm produce? Explain.

(c) To maximize total revenue, how many units of output would the firm produce? Explain.

(d) Identify the firm's profit-maximizing quantity. Explain using marginal analysis.

(e) Calculate the firm's economic profit at the profit-maximizing quantity identified in part (d). Show your work.

Respond to all parts of the question.

**Part A**

Select a point value to view scoring criteria, solutions, and/or examples and to score the response.

| 0 | 1 ✓ |
|---|---|

The response states that the demand curve is inelastic between $3 and $2 and explains that the marginal revenue is negative; or uses numbers to explain that total revenue is falling in that price range, the percentage change in quantity is less than the percentage change in price, or the absolute value of the price elasticity of demand is less than 1.

**Part B**

Select a point value to view scoring criteria, solutions, and/or examples and to score the response.

| 0 | 1 ✓ |
|---|---|

The response states that the firm would produce 4 units of output at the allocatively efficient price and explains that at that quantity the marginal cost to producers equals the marginal benefit to consumers (where marginal cost crosses the demand curve).

**Part C**

Select a point value to view scoring criteria, solutions, and/or examples and to score the response.

| 0 | 1 ✓ |
|---|---|

The response states that the firm would produce 5 units of output to maximize total revenue and explains that at that quantity the marginal revenue is equal to zero, or uses numbers to explain that total revenue is maximized at that quantity of output.

**Part D**

# Unit 2 Practice Questions - ALL

Select a point value to view scoring criteria, solutions, and/or examples and to score the response.

| 0 | 1 ✓ |
|---|---|

The response identifies that the firm's profit-maximizing quantity is 3 units and explains that at that quantity marginal revenue is equal to marginal cost, or explains that when marginal revenue is higher than marginal cost the firm should increase production because each additional sale increases the firm's profit and when marginal cost is higher than marginal revenue the firm should decrease production because it costs more to produce the last unit than what the firm will earn from it.

**Part E**

Select a point value to view scoring criteria, solutions, and/or examples and to score the response.

| 0 | 1 ✓ |
|---|---|

The response calculates the economic profit as $3 and shows the work.

$\text{Economic Profit} = \text{ Total Revenue } - \text{ Total Cost} = \$7 \times 3 - \$6 \times 3 = \$3$

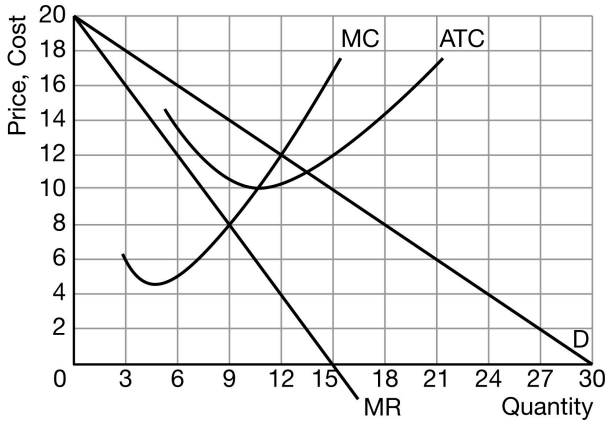
OR

$\text{Economic Profit} = (P - \text{ATC}) \times \text{ Q} = (\$7 - \$6) \times 3 = \$3$

# Unit 2 Practice Questions - ALL

**135. Include correctly labeled diagrams, if useful or required, in explaining your answers. A correctly labeled diagram must have all axes and curves clearly labeled and must show directional changes. If the question prompts you to "Calculate," you must show how you arrived at your final answer.**

Use the following graph to answer parts (a)-(e). Prices and costs are in dollars.




The graph above shows the demand ($D$), marginal revenue ($MR$), marginal cost ($MC$), and average total cost ($ATC$) curves for one of many profit-maximizing firms operating in the short run in an industry in which there are no barriers to entry. Each firm sells a similar but not identical product.

(a) At what quantity is the demand for this product unit elastic? Explain.

(b) Use the relationship between the marginal cost curve and the average total cost curve to explain why the average total cost curve is increasing at 12 units.

(c) If the firm maximizes profit, identify the profit-maximizing quantity and price, and explain how you determined each.

(d) Calculate the deadweight loss at the profit-maximizing quantity identified in part (c). Show your work.

(e) Assume fixed cost increases by $4. Will the profit-maximizing quantity increase, decrease, or stay the same in the short run? Explain.

Respond to all parts of the question.

**Part A**

Select a point value to view scoring criteria, solutions, and/or examples and to score the response.

| 0 | 1 ✓ |
|---|---|

The response states that the demand curve is unit elastic at the quantity of 15 units and explains that the marginal revenue is zero, or uses numbers to explain that total revenue is maximized at this quantity or that the absolute value of the price elasticity of demand is 1.

**Part B**

Select a point value to view scoring criteria, solutions, and/or examples and to score the response.

| 0 | 1 ✓ |
|---|---|

The response explains that at 12 units marginal cost exceeds average total cost, which means that the additional cost of producing the next unit is higher than the average total cost, which pulls the average total cost up for the next unit.

**Part C**

Select a point value to view scoring criteria, solutions, and/or examples and to score the response.

| 0 | 1 ✓ |
|---|---|

The response does both of the following:

· Identifies that the firm's profit-maximizing quantity is 9 units and explains that at that quantity marginal revenue is equal to marginal cost.

# Unit 2 Practice Questions - ALL

· Identifies that the firm's profit-maximizing price is $14 and explains that it is the price on the demand curve at the profit-maximizing quantity (where marginal revenue is equal to marginal cost).

**Part D**

Select a point value to view scoring criteria, solutions, and/or examples and to score the response.

| 0 | 1 ✓ |
|---|---|

The response calculates the deadweight loss at the profit-maximizing quantity as $9 and shows the work.

$\text{Deadweight Loss} = \frac{1}{2}(\$14 - \$8)(12 - 9) = \$9$

**Part E**

Select a point value to view scoring criteria, solutions, and/or examples and to score the response.

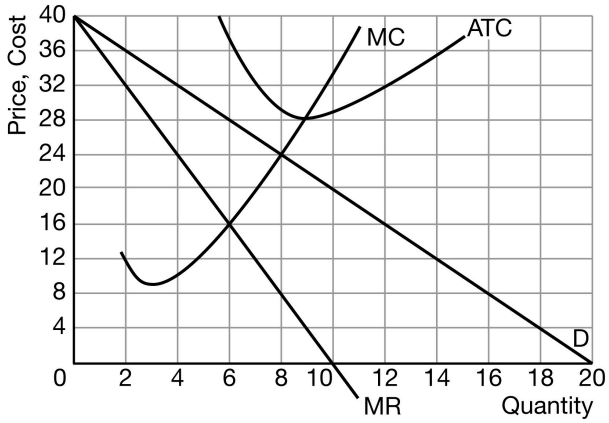
| 0 | 1 ✓ |
|---|---|

The response states that the profit-maximizing quantity will stay the same and explains that the increase in fixed cost does not affect marginal cost in the short run.

# Unit 2 Practice Questions - ALL

**136. Include correctly labeled diagrams, if useful or required, in explaining your answers. A correctly labeled diagram must have all axes and curves clearly labeled and must show directional changes. If the question prompts you to "Calculate," you must show how you arrived at your final answer.**

Use the following graph to answer parts (a)-(e). Prices and costs are in dollars.




The graph above shows the demand ($D$), marginal revenue ($MR$), marginal cost ($MC$), and average total cost ($ATC$) curves for one of many profit-maximizing firms operating in the short run in an industry in which there are no barriers to entry. Each firm sells a similar but not identical product.

(a) What will happen to total revenue if the firm raises the price from $\$12$ to $\$16$? Explain.

(b) At $10$ units, is the firm producing at the allocatively efficient quantity? Explain.

(c) If the firm produces $8$ units, will the firm's economic profit be positive, negative, or zero? Explain.

(d) Use the relationship between the marginal cost curve and the average total cost curve to explain why the average total cost curve is increasing at $10$ units.

(e) Calculate the consumer surplus if the firm charges the profit-maximizing price. Show your work.

Respond to all parts of the question.

**Part A**

Select a point value to view scoring criteria, solutions, and/or examples and to score the response.

| 0 | ✓ 1 |
|---|---|

The response states that total revenue will increase and explains that demand is price inelastic in this price range; or uses numbers to explain that the percentage decrease in quantity demanded is less than the percentage increase in price, the absolute value of the price elasticity of demand is less than 1, or the total revenue increases.

**Part B**

Select a point value to view scoring criteria, solutions, and/or examples and to score the response.

| 0 | ✓ 1 |
|---|---|

The response states that no, the firm is not producing at the allocatively efficient quantity and explains that allocative efficiency is achieved when the marginal cost to producers equals the marginal benefit to consumers, which occurs where the demand curve intersects the marginal cost curve (at 8 units).

**Part C**

Select a point value to view scoring criteria, solutions, and/or examples and to score the response.

| 0 | ✓ 1 |
|---|---|

The response states that at 8 units the firm's economic profit is negative (economic loss) and explains that the price is below the ATC.

**Part D**

# Unit 2 Practice Questions - ALL

Select a point value to view scoring criteria, solutions, and/or examples and to score the response.

| 0 | 1 ✓ |
|---|---|

The response explains that at 10 units marginal cost is greater than average total cost, which means that the cost of producing the next unit is higher than the average total cost, which pulls up the average total cost for the next unit.

**Part E**

Select a point value to view scoring criteria, solutions, and/or examples and to score the response.

| 0 | 1 ✓ |
|---|---|

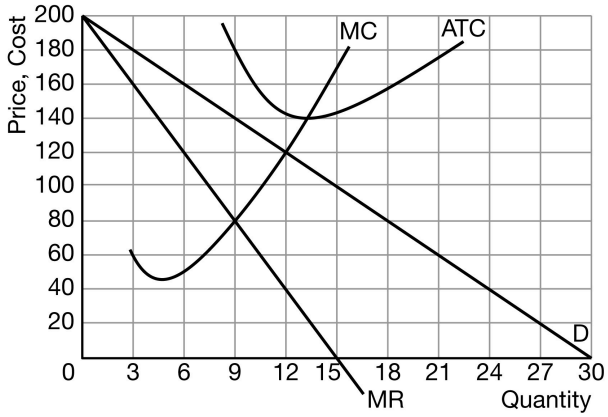
The response calculates the consumer surplus as $36 and shows the work:

$\text{Consumer Surplus} = \frac{1}{2}(6)(\$40 - \$28) = \$36$

# Unit 2 Practice Questions - ALL

**137.** ***Include correctly labeled diagrams, if useful or required, in explaining your answers. A correctly labeled diagram must have all axes and curves clearly labeled and must show directional changes. If the question prompts you to "Calculate," you must show how you arrived at your final answer.***

Use the following graph to answer parts (a)-(e). Prices and costs are in dollars.




The graph above shows the demand ($D$), marginal revenue ($MR$), marginal cost ($MC$), and average total cost ($ATC$) curves for one of many profit-maximizing firms operating in the short run in an industry in which there are no barriers to entry. Each firm sells a similar but not identical product.

(a) For prices between $140 and $120, is the demand curve elastic, inelastic, or unit elastic? Explain.

(b) To produce the allocatively efficient quantity, how many units of output would the firm produce? Explain.

(c) To maximize total revenue, how many units of output would the firm produce? Explain.

(d) Assuming the firm produces a quantity greater than zero, identify the firm's profit-maximizing quantity. Explain using marginal analysis.

(e) Calculate the firm's economic profit at the profit-maximizing quantity identified in part (d). Show your work.

Respond to all parts of the question.

**Part A**

Select a point value to view scoring criteria, solutions, and/or examples and to score the response.

| 0 | ✓ 1 |
|---|---|

The response states that the demand curve is elastic between $140 and $120 and explains that the marginal revenue is positive; or uses numbers to explain that total revenue is rising in that price range, the percentage change in quantity is greater than the percentage change in price, or the absolute value of the price elasticity of demand is greater than 1.

**Part B**

Select a point value to view scoring criteria, solutions, and/or examples and to score the response.

| 0 | ✓ 1 |
|---|---|

The response states that the firm would produce 12 units of output at the allocatively efficient price and explains that at that quantity the marginal cost to producers equals the marginal benefit to consumers (where marginal cost crosses the demand curve).

**Part C**

Select a point value to view scoring criteria, solutions, and/or examples and to score the response.

| 0 | ✓ 1 |
|---|---|

The response states that the firm would produce 15 units of output to maximize total revenue and explains that at that quantity the marginal revenue is equal to zero, or uses numbers to explain that total revenue is maximized at that quantity of output.

# Unit 2 Practice Questions - ALL

**Part D**

Select a point value to view scoring criteria, solutions, and/or examples and to score the response.

| 0 | 1 ✓ |
|---|---|

The response identifies that the firm's profit-maximizing quantity is 9 units and explains that at that quantity marginal revenue is equal to marginal cost, or explains that when marginal revenue is higher than marginal cost the firm should increase production because each additional sale increases the firm's profit and when marginal cost is higher than marginal revenue the firm should decrease production because it costs more to produce the last unit than what the firm will earn from it.

**Part E**

Select a point value to view scoring criteria, solutions, and/or examples and to score the response.

| 0 | 1 ✓ |
|---|---|

The response calculates the economic profit(loss) as $-\$360$ and shows the work.

$\text{Economic Profit} = \text{Total Revenue} - \text{Total Cost} = \$140 \times 9 - \$180 \times 9 = -\$360$

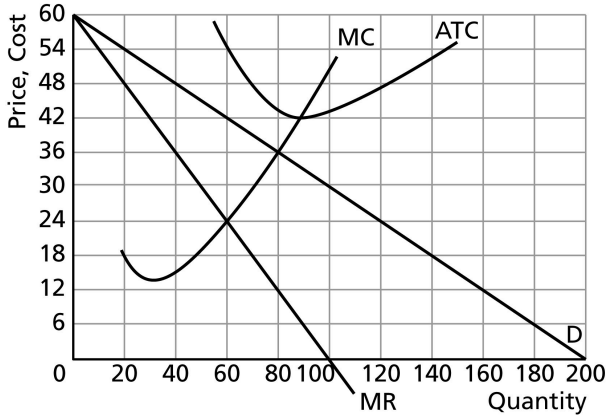
or

$\text{Economic Profit} = (P - \text{ATC}) \times \text{Q} = (\$140 - \$180) \times 9 = \ -\$360$

# Unit 2 Practice Questions - ALL

**138. Include correctly labeled diagrams, if useful or required, in explaining your answers. A correctly labeled diagram must have all axes and curves clearly labeled and must show directional changes. If the question prompts you to "Calculate," you must show how you arrived at your final answer.**

Use the following graph to answer parts (a)-(e). Prices and costs are in dollars.




The graph above shows the demand ($D$), marginal revenue ($MR$), marginal cost ($MC$), and average total cost ($ATC$) curves for one of many profit-maximizing firms operating in the short run in an industry in which there are no barriers to entry. Each firm sells a similar but not identical product.

(a) At what quantity is the demand for this product unit elastic? Explain.

(b) Use the relationship between the marginal cost curve and the average total cost curve to explain why the average total cost curve is decreasing at 80 units.

(c) If the firm maximizes profit, identify the profit-maximizing quantity and price, and explain how you determined each.

(d) Calculate the deadweight loss at the profit-maximizing quantity identified in part (c). Show your work.

(e) Assume fixed cost decreases by $12. Will the profit-maximizing quantity increase, decrease, or stay the same in the short run? Explain.

Respond to all parts of the question.

**Part A**

Select a point value to view scoring criteria, solutions, and/or examples and to score the response.

| 0 | 1 ✓ |
|---|---|

The response states that the demand curve is unit elastic at the quantity of 100 units and explains that the marginal revenue is zero, or uses numbers to explain that total revenue is maximized at this quantity or that the absolute value of the price elasticity of demand is 1.

**Part B**

Select a point value to view scoring criteria, solutions, and/or examples and to score the response.

| 0 | 1 ✓ |
|---|---|

The response explains that at 80 units marginal cost is less than average total cost, which means that the additional cost of producing the next unit is lower than the average total cost, which pulls down the average total cost for the next unit.

**Part C**

Select a point value to view scoring criteria, solutions, and/or examples and to score the response.

| 0 | 1 ✓ |
|---|---|

The response does both of the following:

· Identifies that the firm's profit-maximizing quantity is 60 units and explains that at that quantity marginal revenue is equal to marginal cost.

# Unit 2 Practice Questions - ALL

· Identifies that the firm's profit-maximizing price is $42 and explains that it is the price on the demand curve at the profit-maximizing quantity (where marginal revenue is equal to marginal cost).

**Part D**

Select a point value to view scoring criteria, solutions, and/or examples and to score the response.

| 0 | 1 ✓ |
|---|---|

The response calculates the deadweight loss at the profit-maximizing quantity as $180 and shows the work.

$\text{Deadweight Loss} = \frac{1}{2}(\$42 - \$24)(80 - 60) = \$180$

**Part E**

Select a point value to view scoring criteria, solutions, and/or examples and to score the response.

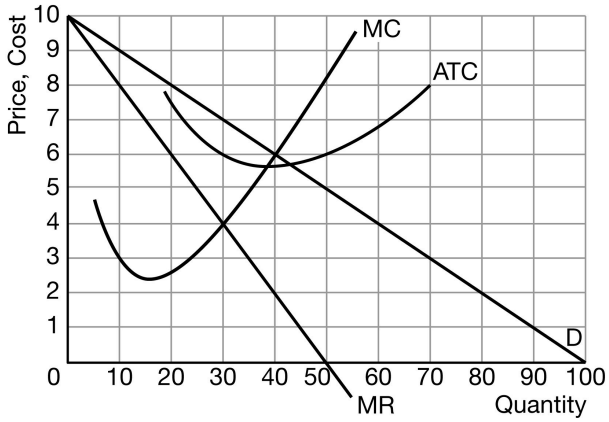
| 0 | 1 ✓ |
|---|---|

The response states that the profit-maximizing quantity will stay the same and explains that the decrease in fixed cost does not affect marginal cost in the short run.

# Unit 2 Practice Questions - ALL

**139. Include correctly labeled diagrams, if useful or required, in explaining your answers. A correctly labeled diagram must have all axes and curves clearly labeled and must show directional changes. If the question prompts you to "Calculate," you must show how you arrived at your final answer.**

Use the following graph to answer parts (a)-(e). Prices and costs are in dollars.




The graph above shows the demand ($D$), marginal revenue ($MR$), marginal cost ($MC$), and average total cost ($ATC$) curves for one of many profit-maximizing firms operating in the short run in an industry in which there are no barriers to entry. Each firm sells a similar but not identical product.

(a) Calculate the total revenue of producing 30 units. Show your work.

(b) For quantities between 30 and 40 units, is the demand curve elastic, inelastic, or unit elastic? Explain.

(c) Assume that this firm is currently charging a price of $6. In order to maximize its profit, should the firm increase its price, decrease its price, or keep its price the same? Explain.

(d) At a quantity of 50 units, does this firm have increasing marginal returns or diminishing marginal returns? Explain.

(e) Identify the firm's allocatively efficient quantity, and explain how you determined it.

Respond to all parts of the question.

**Part A**

Select a point value to view scoring criteria, solutions, and/or examples and to score the response.

| 0 | 1 ✓ |
|---|---|

The response calculates the total revenue of producing 30 units as $210 and shows the work.

$\text{Total Revenue} = \text{Price} \times \text{Quantity} = \$7 \times 30 = \$210$

**Part B**

Select a point value to view scoring criteria, solutions, and/or examples and to score the response.

| 0 | 1 ✓ |
|---|---|

The response states that the demand curve is elastic for quantities between 30 and 40 units and explains that the marginal revenue is positive; or use numbers to explain that total revenue is rising as price goes down in that quantity range, the percentage change in quantity demanded is greater than the percentage change in price, or the absolute value of the price elasticity of demand is greater than 1.

**Part C**

Select a point value to view scoring criteria, solutions, and/or examples and to score the response.

| 0 | 1 ✓ |
|---|---|

# Unit 2 Practice Questions - ALL

The response states that the firm should increase its price and explains that at a price of $6, the marginal cost is greater than the marginal revenue or explains that the profit-maximizing price is 7$ (from the demand curve for the profit-maximizing quantity where marginal cost is equal to marginal revenue).

**Part D**

Select a point value to view scoring criteria, solutions, and/or examples and to score the response.

| 0 | 1 ✓ |
|---|---|

The response states that the firm has diminishing marginal returns and explains that marginal cost is rising at the quantity of 50 units, indicating that the marginal product is falling.

**Part E**

Select a point value to view scoring criteria, solutions, and/or examples and to score the response.

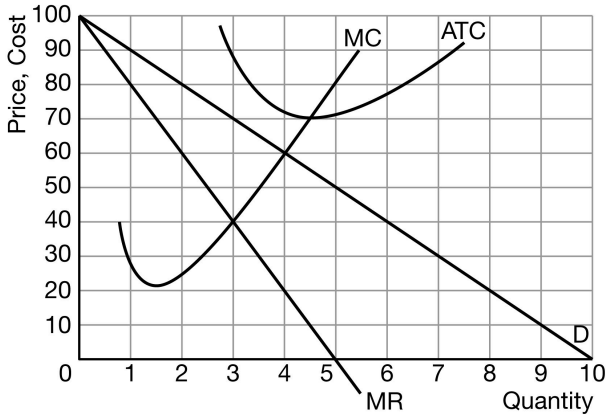
| 0 | 1 ✓ |
|---|---|

The response identifies that the allocatively efficient quantity is 40 units and explains that allocative efficiency is achieved when the marginal cost to producers equals the marginal benefit to consumers, which occurs where the demand curve intersects the marginal cost curve.

# Unit 2 Practice Questions - ALL

**140. Include correctly labeled diagrams, if useful or required, in explaining your answers. A correctly labeled diagram must have all axes and curves clearly labeled and must show directional changes. If the question prompts you to "Calculate," you must show how you arrived at your final answer.**

Use the graph provided to answer parts (a)-(e). Prices and costs are in dollars.




The graph above shows the demand ($D$), marginal revenue ($MR$), marginal cost ($MC$), and average total cost ($ATC$) curves for one of many profit-maximizing firms operating in the short run in an industry in which there are no barriers to entry. Each firm sells a similar but not identical product.

(a) Calculate the total revenue of producing 2 units. Show your work.

(b) For quantities between 6 and 8 units, is the demand curve elastic, inelastic, or unit elastic? Explain.

(c) Assume that this firm is currently charging a price of $80. In order to maximize its profit, should the firm increase its price, decrease its price, or keep its price the same? Explain.

(d) At a quantity of 1 unit, does this firm have increasing marginal returns or diminishing marginal returns? Explain.

(e) Identify the firm's allocatively efficient quantity, and explain how you determined it.

Respond to all parts of the question.

**Part A**

Select a point value to view scoring criteria, solutions, and/or examples and to score the response.

| 0 | 1 ✓ |
|---|---|

The response calculates the total revenue of producing 2 units as $160 and shows the work.

$\text{Total Revenue} = \text{Price} \times \text{Quantity} = \$80 \times 2 = \$160$

**Part B**

Select a point value to view scoring criteria, solutions, and/or examples and to score the response.

| 0 | 1 ✓ |
|---|---|

The response states that the demand curve is inelastic for quantities between 6 and 8 units and explains that the marginal revenue is negative; or uses numbers to explain that total revenue is falling as price declines in that quantity range, the percentage change in quantity demanded is less than the percentage change in price, or the absolute value of the price elasticity of demand is less than 1.

**Part C**

Select a point value to view scoring criteria, solutions, and/or examples and to score the response.

| 0 | 1 ✓ |
|---|---|

# Unit 2 Practice Questions - ALL

The response states that the firm should decrease its price and explains that at a price of $80 the marginal cost is greater than the marginal revenue or explains that the profit-maximizing price is 70$ (this is the price from the demand curve for the profit-maximizing quantity of 3 units where marginal cost is equal to marginal revenue).

**Part D**

Select a point value to view scoring criteria, solutions, and/or examples and to score the response.

| 0 | 1 ✓ |
|---|---|

The response states that the firm has increasing marginal returns and explains that marginal cost is falling at the quantity of 1 unit, indicating that the marginal product is rising.

**Part E**

Select a point value to view scoring criteria, solutions, and/or examples and to score the response.

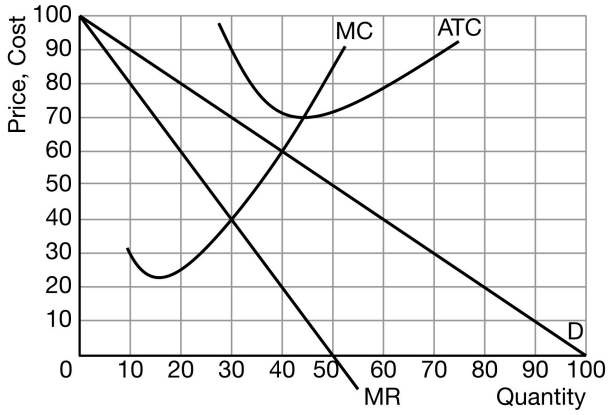
| 0 | 1 ✓ |
|---|---|

The response identifies that the allocatively efficient quantity is 4 units and explains that allocative efficiency is achieved when the marginal cost to producers equals the marginal benefit to consumers, which occurs where the demand curve intersects the marginal cost curve.

# Unit 2 Practice Questions - ALL

**141.** ***Include correctly labeled diagrams, if useful or required, in explaining your answers. A correctly labeled diagram must have all axes and curves clearly labeled and must show directional changes. If the question prompts you to "Calculate," you must show how you arrived at your final answer.***

*Use the following graph to answer* parts (a)-(e). Prices and costs are in dollars.




The graph above shows the demand ($D$), marginal revenue ($MR$), marginal cost ($MC$), and average total cost ($ATC$) curves for one of many profit-maximizing firms operating in the short run in an industry in which there are no barriers to entry. Each firm sells a similar but not identical product.

(a) For prices between $80 and $70, is the demand curve elastic, inelastic, or unit elastic? Explain.

(b) To produce the allocatively efficient quantity, how many units of output would the firm produce? Explain

(c) To maximize total revenue, how many units of output would the firm produce? Explain.

(d) Assuming the firm produces a quantity greater than zero, identify the firm's profit-maximizing quantity. Explain using marginal analysis.

(e) Calculate the firm's economic profit at the profit-maximizing quantity identified in part (d). Show your work.

Respond to all parts of the question.

**Part A**

Select a point value to view scoring criteria, solutions, and/or examples and to score the response.

| 0 | 1 ✓ |
|---|---|

The response states that the demand curve is elastic between $80 and $70 and explains that the marginal revenue is positive; or uses numbers to explain that total revenue is rising in that price range, the percentage change in quantity is greater than the percentage change in price, or the absolute value of the price elasticity of demand is greater than 1.

**Part B**

Select a point value to view scoring criteria, solutions, and/or examples and to score the response.

| 0 | 1 ✓ |
|---|---|

The response states that the firm would produce 40 units of output at the allocatively efficient price and explains that at that quantity the marginal cost to producers equals the marginal benefit to consumers (where marginal cost crosses the demand curve).

**Part C**

Select a point value to view scoring criteria, solutions, and/or examples and to score the response.

| 0 | 1 ✓ |
|---|---|

The response states that the firm would produce 50 units of output to maximize total revenue and explains that at that quantity the marginal revenue is equal to zero, or uses numbers to explain that total revenue is maximized at that quantity of output.

# Unit 2 Practice Questions - ALL

**Part D**

Select a point value to view scoring criteria, solutions, and/or examples and to score the response.

| 0 | 1 ✓ |
|---|---|

The response identifies that the firm's profit-maximizing quantity is 30 units and explains that at that quantity marginal revenue is equal to marginal cost, or explains that when marginal revenue is higher than marginal cost the firm should increase production because each additional sale increases the firm's profit and when marginal cost is higher than marginal revenue the firm should decrease production because it costs more to produce the last unit than what the firm will earn from it.

**Part E**

Select a point value to view scoring criteria, solutions, and/or examples and to score the response.

| 0 | 1 ✓ |
|---|---|

The response calculates the economic profit as $-\$600$ and shows the work.

$\text{Economic Profit} = \text{Total Revenue} - \text{Total Cost} = \$70 \times 30 - \$90 \times 30 = -\$600$

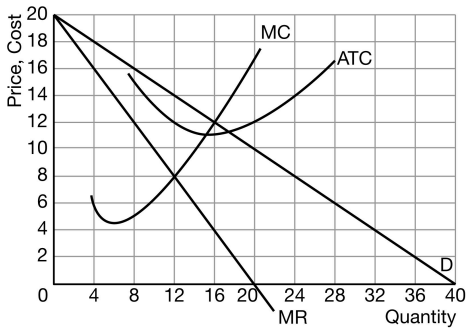
or

$\text{Economic Profit} = (P - \text{ATC}) \times \text{Q} = (\$70 - \$90) \times 30 = -\$600$

# Unit 2 Practice Questions - ALL

**142. Include correctly labeled diagrams, if useful or required, in explaining your answers. A correctly labeled diagram must have all axes and curves clearly labeled and must show directional changes. If the question prompts you to "Calculate," you must show how you arrived at your final answer.**

Use the following graph to answer parts (a)-(e). Prices and costs are in dollars.




The graph above shows the demand ($D$), marginal revenue ($MR$), marginal cost ($MC$), and average total cost ($ATC$) curves for one of many profit-maximizing firms operating in the short run in an industry in which there are no barriers to entry. Each firm sells a similar but not identical product.

(a) Calculate the total revenue of producing 8 units. Show your work.

(b) For quantities between 8 and 12 units, is the demand curve elastic, inelastic, or unit elastic? Explain.

(c) Assume that this firm is currently charging a price of $14. In order to maximize its profit, should the firm increase its price, decrease its price, or keep its price the same? Explain.

(d) At a quantity of 8 units, does this firm have increasing marginal returns or diminishing marginal returns? Explain.

(e) Identify the firm's allocatively efficient quantity, and explain how you determined it.

Respond to all parts of the question.

**Part A**

Select a point value to view scoring criteria, solutions, and/or examples and to score the response.

| 0 | 1 ✓ |
|---|---|

The response calculates the total revenue of producing 8 units as $128 and shows the work.

$\text{Total Revenue} = \text{Price} \times \text{Quantity} = \$16 \times 8 = \$128$

**Part B**

Select a point value to view scoring criteria, solutions, and/or examples and to score the response.

| 0 | 1 ✓ |
|---|---|

The response states that the demand curve is elastic for quantities between 8 and 12 units and explains that the marginal revenue is positive; or uses numbers to explain that total revenue is rising as price declines in that quantity range, the percentage change in quantity demanded is greater than the percentage change in price, or the absolute value of the price elasticity of demand is greater than 1.

**Part C**

Select a point value to view scoring criteria, solutions, and/or examples and to score the response.

| 0 | 1 ✓ |
|---|---|

The response states that the firm should keep its price the same and explains that at a price of $14, the marginal cost is equal to the marginal revenue.

**Part D**

Select a point value to view scoring criteria, solutions, and/or examples and to score the response.

# Unit 2 Practice Questions - ALL

| 0 | 1 ✓ |
|---|---|

The response states that the firm has diminishing marginal returns and explains that marginal cost is rising at the quantity of 8 units, indicating that the marginal product is falling.

**Part E**

Select a point value to view scoring criteria, solutions, and/or examples and to score the response.

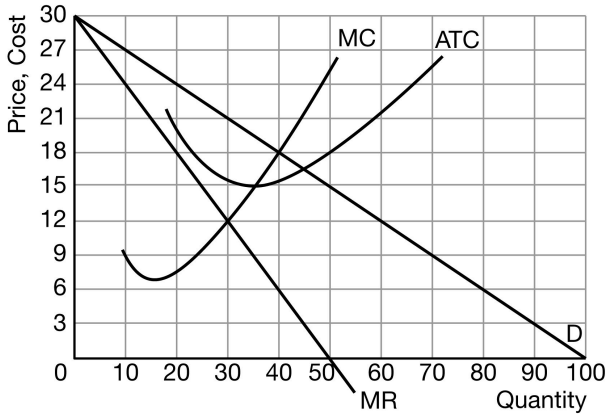
| 0 | 1 ✓ |
|---|---|

The response identifies that the allocatively efficient quantity is 16 units and explains that allocative efficiency is achieved when the marginal cost to producers equals the marginal benefit to consumers, which occurs where the demand curve intersects the marginal cost curve.

# Unit 2 Practice Questions - ALL

**143. Include correctly labeled diagrams, if useful or required, in explaining your answers. A correctly labeled diagram must have all axes and curves clearly labeled and must show directional changes. If the question prompts you to "Calculate," you must show how you arrived at your final answer.**

Use the following graph to answer parts (a)-(e). Prices and costs are in dollars.




The graph above shows the demand ($D$), marginal revenue ($MR$), marginal cost ($MC$), and average total cost ($ATC$) curves for one of many profit-maximizing firms operating in the short run in an industry in which there are no barriers to entry. Each firm sells a similar but not identical product.

(a) At what quantity is the demand for this product unit elastic? Explain.

(b) Use the relationship between the marginal cost curve and the average total cost curve to explain why the average total cost curve is increasing at 40 units.

(c) If the firm maximizes profit, identify the profit-maximizing quantity and price, and explain how you determined each.

(d) Calculate the deadweight loss at the profit-maximizing quantity identified in part (c). Show your work.

(e) Assume fixed cost increases by $6. Will the profit-maximizing quantity increase, decrease, or stay the same in the short run? Explain.

Respond to parts of the question.

**Part A**

Select a point value to view scoring criteria, solutions, and/or examples and to score the response.

| 0 | ✓ 1 |
|---|---|

The response states that the demand curve is unit elastic at the quantity of 50 units and explains that the marginal revenue is zero, or uses numbers to explain that total revenue is maximized at this quantity or that the absolute value of the price elasticity of demand is 1.

**Part B**

Select a point value to view scoring criteria, solutions, and/or examples and to score the response.

| 0 | ✓ 1 |
|---|---|

The response explains that at 40 units marginal cost exceeds average total cost, which means that the additional cost of producing the next unit is higher than the average total cost, which pulls the average total cost up for the next unit.

**Part C**

Select a point value to view scoring criteria, solutions, and/or examples and to score the response.

| 0 | ✓ 1 |
|---|---|

The response does both of the following:

· Identifies that the firm's profit-maximizing quantity is 30 units and explains that at that quantity marginal revenue is equal to marginal cost.

# Unit 2 Practice Questions - ALL

· Identifies that the firm's profit-maximizing price is $21 and explains that it is the price on the demand curve at the profit-maximizing quantity (where marginal revenue is equal to marginal cost).

**Part D**

Select a point value to view scoring criteria, solutions, and/or examples and to score the response.

| 0 | 1 ✓ |
|---|---|

The response calculates the deadweight loss at the profit-maximizing quantity as $45 and shows the work.

$\text{Deadweight Loss} = \frac{1}{2}(\$21 - \$12)(40 - 30) = \$45$

**Part E**

Select a point value to view scoring criteria, solutions, and/or examples and to score the response.

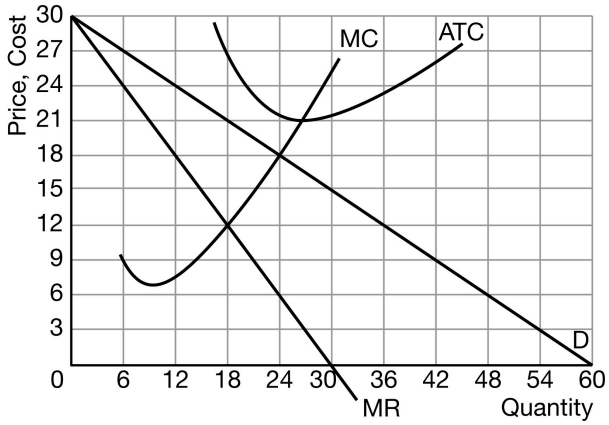
| 0 | 1 ✓ |
|---|---|

The response states that the profit-maximizing quantity will stay the same and explains that the increase in fixed cost does not affect marginal cost in the short run.

# Unit 2 Practice Questions - ALL

**144. Include correctly labeled diagrams, if useful or required, in explaining your answers. A correctly labeled diagram must have all axes and curves clearly labeled and must show directional changes. If the question prompts you to "Calculate," you must show how you arrived at your final answer.**

Use the following graph to answer parts (a)-(e). Prices and costs are in dollars.




The graph above shows the demand ($D$), marginal revenue ($MR$), marginal cost ($MC$), and average total cost ($ATC$) curves for one of many profit-maximizing firms operating in the short run in an industry in which there are no barriers to entry. Each firm sells a similar but not identical product.

(a) At what quantity is the demand for this product unit elastic? Explain.

(b Use the relationship between the marginal cost curve and the average total cost curve to explain why the average total cost curve is decreasing at 18 units.

(c) If the firm maximizes profit, identify the profit-maximizing quantity and price, and explain how you determined each.

(d) Calculate the deadweight loss at the profit-maximizing quantity identified in part (c). Show your work.

(e) Assume fixed cost decreases by $9. Will the profit-maximizing quantity increase, decrease, or stay the same in the short run? Explain.

Respond to all parts of the question.

**Part A**

Select a point value to view scoring criteria, solutions, and/or examples and to score the response.

| 0 | ✓ 1 |
|---|---|

The response states that the demand curve is unit elastic at the quantity of 30 units and explains that the marginal revenue is zero, or uses numbers to explain that total revenue is maximized at this quantity or that the absolute value of the price elasticity of demand is 1.

**Part B**

Select a point value to view scoring criteria, solutions, and/or examples and to score the response.

| 0 | ✓ 1 |
|---|---|

The response explains that at 18 units marginal cost is less than average total cost, which means that the additional cost of producing the next unit is lower than the average total cost, which pulls down the average total cost for the next unit.

**Part C**

Select a point value to view scoring criteria, solutions, and/or examples and to score the response.

| 0 | ✓ 1 |
|---|---|

The response does both of the following:

· Identifies that the firm's profit-maximizing quantity is 18 units and explains that at that quantity marginal revenue is equal to marginal cost.

# Unit 2 Practice Questions - ALL

· Identifies that the firm's profit-maximizing price is $21 and explains that it is the price on the demand curve at the profit-maximizing quantity (where marginal revenue is equal to marginal cost).

**Part D**

Select a point value to view scoring criteria, solutions, and/or examples and to score the response.

| 0 | 1 ✓ |
|---|---|

The response calculates the deadweight loss at the profit-maximizing quantity as $27 and shows the work.

$\text{Deadweight Loss} = \frac{1}{2}(\$21 - \$12)(24 - 18) = \$27$

**Part E**

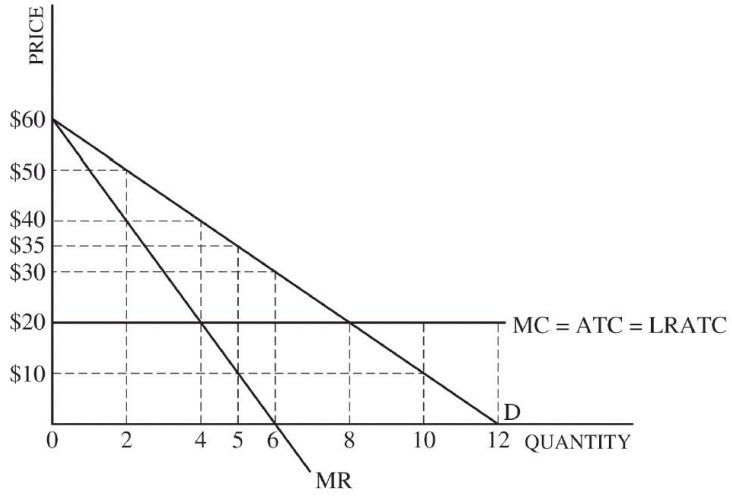
Select a point value to view scoring criteria, solutions, and/or examples and to score the response.

| 0 | 1 ✓ |
|---|---|

The response states that the profit-maximizing quantity will stay the same and explains that the decrease in fixed cost does not affect marginal cost in the short run.

# Unit 2 Practice Questions - ALL

**145.** The graph below shows the demand curve (D), marginal revenue curve (MR), marginal cost curve (MC), average total cost curve (ATC), and long-run average total cost curve (LRATC) for a monopolist.




a. Using the numbers given in the graph, identify each of the following for the profit-maximizing monopolist.

i. The quantity produced

ii. The price

iii. The allocatively efficient quantity

b. At the profit-maximizing quantity from part (a)(i), is the monopolist experiencing economies of scale? Explain.

c. Now assume that the monopolist produces 10 units. Using the numbers given in the graph, calculate each of the following. Show your work.

i. The monopolist's economic profit

ii. The consumer surplus

iii. The deadweight loss

d. At what quantity is demand unit elastic?

e. Suppose the monopolist perfectly price discriminates and chooses the quantity that maximizes profit. Determine the dollar value of each of the following.

i. The monopolist's profit

ii. The consumer surplus

Respond to all parts of the question.

**Part A**

3 points:

- One point is earned for identifying the profit-maximizing quantity, Q = 4.
- One point is earned for identifying the profit-maximizing price, P = $40.
- One point is earned for identifying the allocatively efficient output , Q = 8.

| 0 | 1 | 2 | 3 ✓ |
|---|---|---|---|

Student receives 3/3 point(s)

- One point is earned for identifying the profit-maximizing quantity, Q = 4.
- One point is earned for identifying the profit-maximizing price, P = $40.
- One point is earned for identifying the allocatively efficient output , Q = 8.

**Part B**

# Unit 2 Practice Questions - ALL

1 point

- One point is earned for stating that the firm is not experiencing economies of scale and for explaining that the LRATC is not downward sloping as output increases or LRATC remains constant as output increases.

| 0 | 1 ✓ |
|---|---|

Student receives 1/1 point(s)

1 point

- One point is earned for stating that the firm is not experiencing economies of scale and for explaining that the LRATC is not downward sloping as output increases or LRATC remains constant as output increases.

**Part C**

3 points:

- One point is earned for correctly showing the calculation for the monopolist's economic profit.

  $\pi$ = (P - ATC) x Q = (10−20) x 10 = -$100

  Or loss of $100

  Other correct calculations are acceptable.

- One point is earned for correctly showing the calculation of consumer surplus.

  CS= 1/2 (60−10) X 10 = $250

  Other correct calculations are acceptable.

- One point is earned for correctly showing the calculation of the deadweight loss.

  DWL = 1/2 (20−10) x (10 - 8) = $10

  Other correct calculations are acceptable.

| 0 | 1 | 2 | 3 ✓ |
|---|---|---|---|

Student receives 3/3 point(s)

3 points:

- One point is earned for correctly showing the calculation for the monopolist's economic profit.

  $\pi$ = (P - ATC) x Q = (10−20) x 10 = -$100

  Or loss of $100

  Other correct calculations are acceptable.

- One point is earned for correctly showing the calculation of consumer surplus.

  CS= 1/2 (60−10) X 10 = $250

  Other correct calculations are acceptable.

- One point is earned for correctly showing the calculation of the deadweight loss.

  DWL = 1/2 (20−10) x (10 - 8) = $10

  Other correct calculations are acceptable.

**Part D**

1 point

- One point is earned for identifying the quantity at which demand is unit elastic, 6.

# Unit 2 Practice Questions - ALL

| 0 | 1 ✓ |
|---|---|

Student receives 1/1 point(s)

1 point

- One point is earned for identifying the quantity at which demand is unit elastic, 6.

**Part E**

2 points:

- One point is earned for correctly determining the monopolist's profit.

  1/2[(60−20) x 8] = $160

- One point is earned for correctly determining the consumer surplus as zero.

| 0 | 1 | 2 ✓ |
|---|---|---|

Student receives 2/2 point(s)

2 points:

- One point is earned for correctly determining the monopolist's profit.

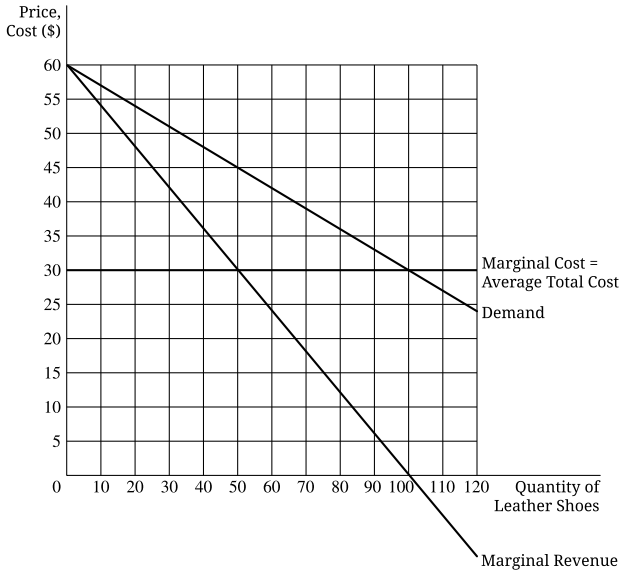
  1/2[(60−20) x 8] = $160

- One point is earned for correctly determining the consumer surplus as zero.

# Unit 2 Practice Questions - ALL

**146.** Include correctly labeled diagrams, if useful or required, in explaining your answers. A correctly labeled diagram must have all axes and curves clearly labeled and must show directional changes. If the question prompts you to "Calculate," you must show how you arrived at your final answer.

The provided graph shows cost, revenue, and demand curves for a single-price monopolist that sells leather shoes. The fixed cost is zero, and the marginal cost is constant.




(a) Identify the monopolist's profit-maximizing quantity and price.

(b) Calculate the monopolist's economic profit at the profit-maximizing quantity. Show your work.

(c) If the monopolist decides to produce 10 additional units beyond the profit-maximizing quantity identified in part (a), would total revenue increase, decrease, or remain the same? Explain.

(d) Suppose the government breaks up the monopoly, resulting in a perfectly competitive market for leather shoes.

(i) Identify the new equilibrium quantity and price.

(ii) Calculate the total economic surplus. Show your work.

Respond to all parts of the question.

**Part A**

Select a point value to view scoring criteria, solutions, and/or examples and to score the response.

| 0 | 1 ✓ |
|---|---|

The response accurately includes the criterion below.

- ☐ States that the profit-maximizing quantity is 50 units and the profit-maximizing price is $45.

**Part B**

Select a point value to view scoring criteria, solutions, and/or examples and to score the response.

The response must show appropriate work in order to receive the point.

| 0 | 1 ✓ |
|---|---|

The response accurately includes the criterion below

Calculates the profit as $750 and shows the work.

# Unit 2 Practice Questions - ALL

☐ $\text{Profit} = (\text{Price} - \text{Average Total Cost}) \times \text{Quantity}$
$= (\$45 - \$30) \times 50$
$= \$15 \times 50$
$= \$750$
OR
$\text{Profit} = \text{Total Revenue} - \text{Total Cost}$
$= (\$45 \times 50) - (\$30 \times 50)$
$= \$2,250 - \$1,500$
$= \$750$

**Part C**

Select a point value to view scoring criteria, solutions, and/or examples and to score the response.

| 0 | 1 ✓ |
|---|---|

The response accurately includes the criterion below.

☐ States that total revenue will increase and explains with **ONE** of the following.

- Marginal revenue is positive between 50 and 60 units.
- The demand is elastic in this range of output.

**Part D**

Select a point value to view scoring criteria, solutions, and/or examples and to score the response.

The response must show appropriate work in order to receive the point.

| 0 | 1 | 2 ✓ |
|---|---|---|

The response accurately includes two of the criteria below.

☐ Identifies the equilibrium quantity as 100 and the equilibrium price as $30.

☐ Calculates the total economic surplus as $1,500 and shows the work.
$\text{Total Economic Surplus} = \text{Consumer Surplus} + \text{Producer Surplus}$
$\text{Total Economic Surplus} = [\frac{1}{2} \times (\$60 - \$30) \times 100] + \$0$
$= [\frac{1}{2} \times (\$30) \times 100]$
$= \$1,500$

# Unit 2 Practice Questions - ALL

**147. Include correctly labeled diagrams, if useful or required, in explaining your answers. A correctly labeled diagram must have all axes and curves clearly labeled and must show directional changes. If the question prompts you to "Calculate," you must show how you arrived at your final answer.**

NCHart is a corporation that has developed and patented a new drug to treat heart disease. There are no substitutes for this drug, giving NCHart a monopoly.

(a) Draw a correctly labeled graph of NCHart making a positive economic profit, and show each of the following.

(i) The profit-maximizing quantity, labeled $Q_m$
(ii) The profit-maximizing price, labeled $P_m$

(b) At $Q_m$ from part (a)(i), is demand elastic, unit elastic, or inelastic? Explain using information from the graph.

(c) Instead of maximizing profit, suppose NCHart considers providing the new drug to as many patients as possible as long as it can generate enough revenue to cover its total costs.

(i) On your graph from part (a), show the quantity that is consistent with this goal, labeled $Q_z$.
(ii) At $Q_z$ from part (c)(i), is there a deadweight loss? Explain.

(d) NCHart's patent expires next year, and a new firm, TXDrug, is considering whether to Enter this market or Stay Out. NCHart can either produce $Q_m$ or $Q_z$. The firms independently and simultaneously choose their actions. The first entry in the payoff matrix represents NCHart's payoff and the second entry represents TXDrug's payoff. Both firms have complete information. Use the payoff matrix below to answer the following questions.

| | | TXDrug | |
|---|---|---|---|
| | | Stay Out | Enter |
| NCHart | $Q_m$ | \$10, \$0 | \$4, \$1 |
| | $Q_z$ | \$0, \$0 | −\$2, − \$1 |

(i) Does TXDrug have a dominant strategy? Explain using strategies and payoffs from the payoff matrix.
(ii) What is the best response for NCHart if TXDrug chooses to Stay Out?
(iii) Identify the Nash equilibrium.

Respond to all parts of the question:

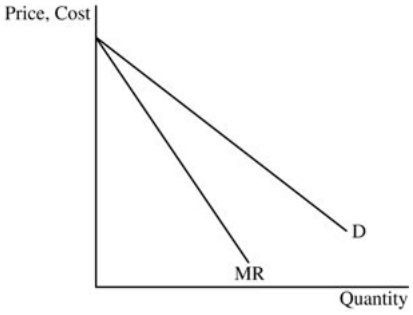
**Part A**

Select a point value to view scoring criteria, solutions, and/or examples and to score the response.

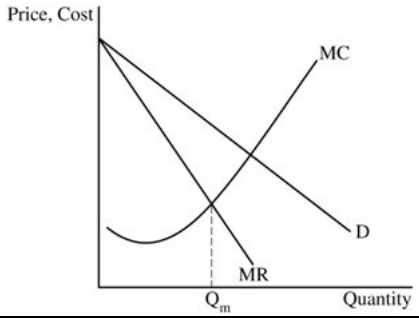
| 0 | 1 | 2 | 3 | 4 ✓ |
|---|---|---|---|---|

The response accurately includes the four criteria below.

Draws a correctly labeled graph for NCHart showing downward-sloping demand (D) and marginal revenue (MR) curves with the marginal revenue curve below the demand curve.

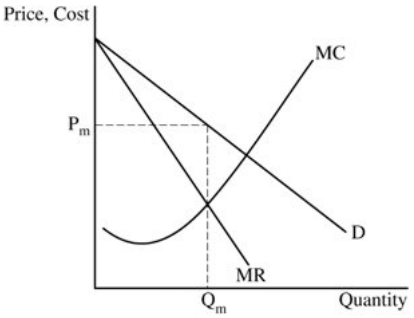



Shows the marginal cost (MC) curve and the profit-profit-maximizing quantity, labeled $Q_m$, where $MR = MC$.

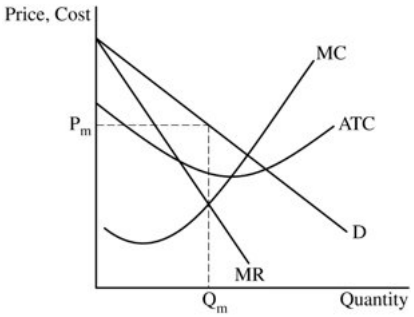


# Unit 2 Practice Questions - ALL

Shows the profit-maximizing price, labeled $P_m$, above $Q_m$ from the demand curve.




Shows the ATC below the demand curve at $Q_m$ with the MC curve rising and intersecting the ATC curve at its minimum.




**Part B**

Select a point value to view scoring criteria, solutions, and/or examples and to score the response.

| 0 | 1 ✓ |
|---|---|

The response accurately includes the criterion below.

States that demand is elastic and explains that MR is positive at $Q_m$ or that $Q_m$ is less than the quantity at which marginal revenue equals zero.

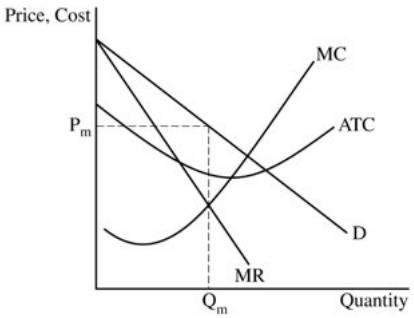
**Part C**

Select a point value to view scoring criteria, solutions, and/or examples and to score the response.

| 0 | 1 | 2 ✓ |
|---|---|---|

The response accurately includes the two criteria below.

Shows the quantity that is consistent with the goal of NCHart generating enough revenue to cover its total costs labeled as $Q_Z$.




States there is a deadweight loss at $Q_Z$ and explains that $P\ (\text{or } D) < MC$, as shown.

Note: Deadweight loss will exist at $Q_Z$ if the demand is drawn such that the quantity at which $D = ATC$ is less than the quantity at which $D = MC$, because $P\ (\text{or } D) > MC$.

# Unit 2 Practice Questions - ALL

Note: Deadweight loss will NOT exist at $Q_Z$ if the demand is drawn such that the quantity at which $D = ATC$ is equal the quantity at which $D = MC$, because $P$ (or $D$) $= MC$.

**Part D**

Select a point value to view scoring criteria, solutions, and/or examples and to score the response.

| 0 | 1 | 2 | 3 ✓ |
|---|---|---|---|

The response accurately includes the three criteria below.

- ☐ States that no, TXDrug does not have a dominant strategy, and explains that if NCHart chooses $Q_m$, then TXDrug's best response is to Enter because $\$1 > \$0$, but if NCHart chooses $Q_Z$, then TXDrug's best response is to Stay Out because $\$0 > -\$1$.
- ☐ States that the best response for NCHart is to produce $Q_M$.
- ☐ Identifies the Nash equilibrium as NCHart produces $Q_M$ and TXDrug chooses to Enter.

**148.** Which of the following will tend to make the demand for a product more elastic?

(A) New firms which produce similar products enter the industry. ✓
(B) A change in taste and preferences makes the product more desirable.
(C) The product is necessary for use with a complement.
(D) Production of the product is protected by a patent.
(E) Production cost of the product decreases.

**149.** The absolute value of the price elasticity of demand for a good increases when

(A) the good has fewer substitutes
(B) the good becomes a necessity
(C) consumers spend greater portion of their budget on the good ✓
(D) the price of an input used to produce the good increases
(E) the good must be purchased immediately

**150.** The demand curve for shoes is downward sloping, and the absolute value of the price elasticity of demand is $2$. If the price of shoes increases by $3$ percent, what will happen to the quantity of shoes demanded?

(A) It will decrease by $6\%$. ✓
(B) It will decrease by $3\%$.
(C) It will decrease by $2\%$.
(D) It will increase by $6\%$.
(E) It will increase by $3\%$.

**Answer A**

Correct. Price elasticity of demand is calculated as the absolute value of the percentage change in quantity demanded/percentage change in price. Therefore, the percentage change in quantity demanded is the product of the price elasticity of demand and the percentage change in price, which is equal to $2 \times 3\% = 6\%$. Since the demand curve for shoes is downward sloping, a $3\%$ increase in the price of shoes will cause the quantity demanded to decrease by $6\%$.

# Unit 2 Practice Questions - ALL

**151.** The postmaster general of a country decides to double the price of first-class stamps, expecting the action to cause the revenues from sales of first-class stamps to double. What absolute value of price elasticity of demand is the postmaster general assuming in making the projection?

(A) $0$ ✓
(B) Between $0$ and $1$
(C) $1$
(D) Greater than $1$
(E) Infinite

**Answer A**

Correct. For a doubling of the price of first-class stamps to result in a doubling of revenue from stamp sales, the quantity of stamps sold must remain unchanged. When the absolute value of price elasticity of demand is $0$, demand is perfectly inelastic indicating quantity demand is not responsive to changes in price. Thus, revenues from stamp sales will increase by the same percentage increase in price, and so doubling of the price will cause total revenue to double.

**152.** Katie's demand for chocolate bars is perfectly inelastic at a quantity of one per week. Maximiliano will consume three chocolate bars per week when the price is $\$1$, and he will consume four per week when the price is $\$0.50$. Katie and Maximiliano are the only consumers of chocolate bars. Which of the following best describes the price elasticity of market demand beginning at the price of $\$0.50$ and ending at the price of $\$1$ ?

(A) Perfectly inelastic
(B) Inelastic ✓
(C) Unit elastic
(D) Elastic
(E) Perfectly elastic

**Answer B**

Correct. Since Katie and Maximiliano are the only consumers of chocolate bars, the market quantity demanded is $5$ when the price is $\$0.50$ and $4$ when the price is $\$1.00$. The price elasticity of demand is calculated as the absolute value of the percentage change in quantity demanded/percentage change in price. In this scenario, the percentage change in quantity demanded is $(4-5)/(5)\times 100=-20\%$. The percentage change in price is $(\$1-\$0.50)/(\$0.50)\times 100=100\%$. This means that the coefficient of the price elasticity of demand coefficient is $0.2$ $\left(=\left|\frac{-20\%}{100\%}\right|\right)$, which is in the inelastic range of values for this portion of the demand curve.

**153.** If the absolute value of the price elasticity of demand for Good X is $0.5$, then a $10$ percent decrease in the price of Good X will result in which of the following?

(A) A $5\%$ decrease in the quantity demanded of Good X
(B) A $5\%$ increase in the quantity demanded of Good X ✓
(C) A $5\%$ increase in revenues from the sale of Good X
(D) A $10\%$ decrease in revenues from the sale of Good X
(E) A $10\%$ increase in revenues from the sale of Good X

**Answer B**

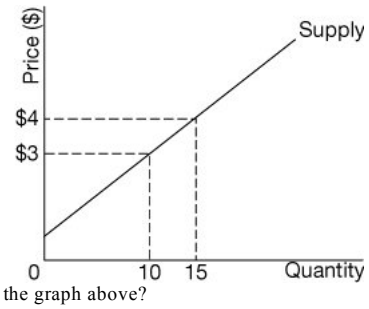
Correct. The price elasticity of demand measures the percentage change in quantity demanded resulting from a given change in the price of the good. It also assumes the negative relationship between the price and quantity demanded across the demand curve. When the absolute value of the price elasticity of demand is $0.5$, this means that demand is price inelastic. Therefore, the quantity demanded of Good X will increase by $5\%$ $(=0.5\times 10\%)$.

**154.** The quantity of peanuts supplied increased from 40 tons per week to 60 tons per week when the price of peanuts increased from $4 per ton to $5 per ton. The price elasticity of supply for peanuts over this price range is

(A) elastic ✓
(B) inelastic
(C) unit elastic
(D) perfectly elastic
(E) perfectly inelastic

# Unit 2 Practice Questions - ALL

**155.**




What is the price elasticity of supply between $3 and $4 in the graph above?

(A) It is greater than 1, and the supply is relatively inelastic.

(B) It is greater than 1, and the supply is relatively elastic. ✓

(C) It is equal to 1, and the supply is unit elastic.

(D) It is less than 1, and the supply is relatively elastic.

(E) It is less than 1, and the supply is relatively inelastic.

**Answer B**

Correct. The formula to calculate price elasticity of supply is the percentage change in quantity divided by the percentage change in price, which in this case is $= \frac{\frac{15-10}{10} \times 100}{\frac{\$4-\$3}{\$3} \times 100} = \frac{50\%}{33\%} = 1.52$. The value is greater than one, so supply is relatively elastic.

**156.** Which of the following must be true if the revenues of wheat farmers increase when the price of wheat increase?

(A) The supply of wheat is price elastic.

(B) The supply of wheat is income elastic.

(C) The supply of wheat is income inelastic.

(D) The demand for wheat is price elastic.

(E) The demand for wheat is price inelastic. ✓

# Unit 2 Practice Questions - ALL

**157.** Raphael's hair salon is a monopoly in a small town and is currently earning an economic profit.

a. Draw a correctly labeled graph for Raphael and include the curves that are necessary to identify the following.

i. The profit-maximizing price and quantity of haircuts, labeled $P_m$ and $Q_m$

ii. The area representing economic profits, shaded completely

b. Does Raphael's hair salon produce the allocatively efficient quantity? Explain.

c. Assume that Raphael signs a new lease with an increase in rent, a fixed cost. Will the price of haircuts provided by Raphael increase, decrease, or stay the same in the short run? Explain.

d. Assume that new hair salons enter the market and that the market becomes monopolistically competitive. Answer each of the following.

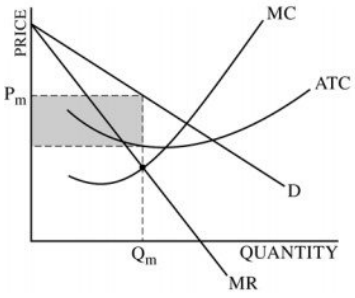
i. The entry of new hair salons creates close substitutes for each individual salon's services. As a result, will the demand for Raphael's hair salon become more elastic or become less elastic, or will there be no change in the elasticity?

ii. Will the entry cause the demand curve for Raphael's haircuts to shift to the left, shift to the right, or stay the same?

iii. In long-run equilibrium, will Raphael's hair salon produce the productively efficient quantity? Explain.

Respond to all parts of the question.

**Part A**

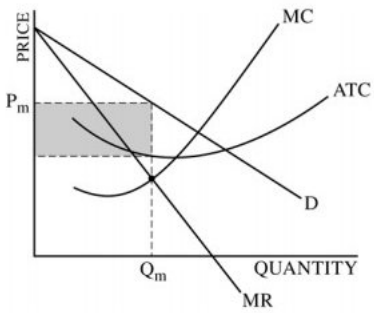



**5 Points**

- One point is earned for drawing a graph with correctly labeled axes, downward sloping demand curve, and MR below the demand curve.
- One point is earned for identifying the profit-maximizing quantity, Qm , at MR=MC.
- One point is earned for identifying the price, Pm, derived from the demand curve above Qm.
- One point is earned for drawing MC passing through the minimum point on a u-shape ATC curve (or correct MC/ATC).
- One point is earned for showing the area that represents the profit, completely shaded.

| 0 | 1 | 2 | 3 | 4 | 5 ✓ |
|---|---|---|---|---|---|

The student earns all of the following points:




- One point is earned for drawing a graph with correctly labeled axes, downward sloping demand curve, and MR below the demand curve.
- One point is earned for identifying the profit-maximizing quantity, Qm , at MR=MC.

# Unit 2 Practice Questions - ALL

- One point is earned for identifying the price, Pm, derived from the demand curve above Qm.
- One point is earned for drawing MC passing through the minimum point on a u-shape ATC curve (or correct MC/ATC).
- One point is earned for showing the area that represents the profit, completely shaded.

**Part B**

One point is earned for stating no with the explanation that at Qm, P>MC.

| 0 | 1 ✓ |
|---|---|

The student earns all of the following points:

- One point is earned for stating no with the explanation that at Qm, P>MC.

**Part C**

One point is earned for stating that the price stays the same because rent is a fixed cost that affects only the ATC or does not affect the MC (or does not affect the marginal values).

| 0 | 1 ✓ |
|---|---|

The student earns all of the following points:

- One point is earned for stating that the price stays the same because rent is a fixed cost that affects only the ATC or does not affect the MC (or does not affect the marginal values).

**Part D**

**3 Points**

- One point is earned for stating that the demand becomes more elastic.
- One point is earned for stating that Raphael's demand curve shifts to the left.
- One point is earned for stating that Raphael's hair salon does not produce the productively efficient quantity because the quantity Raphael produces does not minimize long-run ATC (or Q is to the left of the minimum point on ATC).

| 0 | 1 | 2 | 3 ✓ |
|---|---|---|---|

The student earns all of the following points:

- One point is earned for stating that the demand becomes more elastic.
- One point is earned for stating that Raphael's demand curve shifts to the left.
- One point is earned for stating that Raphael's hair salon does not produce the productively efficient quantity because the quantity Raphael produces does not minimize long-run ATC (or Q is to the left of the minimum point on ATC).

# Unit 2 Practice Questions - ALL

**158.** Suppose the price elasticity of supply for gasoline in the short run is estimated to be 0.4. Due to an unexpected surge in the demand for gasoline, the price of gasoline increases by 20 percent. As a result, the quantity supplied of gasoline will

(A) increase by 50 percent

(B) increase by 20 percent

(C) increase by 8 percent ✓

(D) decrease by 0.2 percent

(E) be impossible to determine from the given information

**Answer C**

Correct. The price elasticity of supply measures the responsiveness of quantity supplied to a given change in the price. It is calculated as the ratio of the percentage change in quantity supplied to the percentage change in price. Given the value of the elasticity and the percentage change in the price of gasoline, the percentage change in quantity can be obtained by multiplying the elasticity of supply by the percentage change in the price. That is, 0.4 times 20 percent, which is equal to 8 percent. Thus, the quantity supplied will increase by 8 percent.

# Unit 2 Practice Questions - ALL

**159.** Stevenrail, the only provider of train service operating between two cities, is currently incurring economic losses.

a. Using a correctly labeled graph, show each of the following.

i. Stevenrail's loss-minimizing price and quantity, labeled $P_m$ and $Q_m$ respectively

ii. The area of economic losses, shaded completely

iii. The allocatively efficient quantity, labeled $Q_e$

b. If Stevenrail raised the price above $P_m$ identified in part (a)(i), would total revenue increase, decrease, or not change? Explain.

c. Assume a per-unit subsidy is provided to Stevenrail.

i. Will Stevenrail's quantity increase, decrease, or not change? Explain.

ii. Will consumer surplus increase, decrease, or not change?

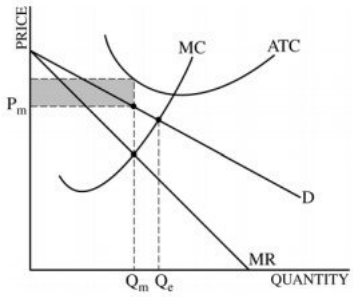
d. Assume instead that a lump-sum subsidy is provided to Steverail. For the short run, answer the following.

i. Will the deadweight loss increase, decrease, or not change? Explain

ii. Will Steverail's economic losses increase, decrease, or not change?

Respond to all parts of the question.

**Part A**

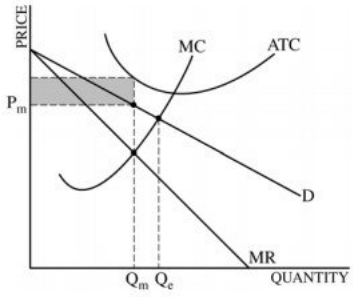



**5 Points**

- One point is earned for a correctly labeled downward-sloping demand curve and a downward-sloping marginal revenue curve below the demand curve
- One point is earned for identifying the profit-maximizing quantity, Qm, at MR = MC.
- One point is earned for identifying price, Pm, above Qm on the demand curve.
- One point is earned for shading the area of economic loss.
- One point is earned for identifying the allocatively efficient quantity, Qe, at MC = D.

| 0 | 1 | 2 | 3 | 4 | 5 ✓ |
|---|---|---|---|---|---|

The student earns all of the following points:




- One point is earned for a correctly labeled downward-sloping demand curve and a downward-sloping marginal revenue curve below the demand curve

# Unit 2 Practice Questions - ALL

- One point is earned for identifying the profit-maximizing quantity, Qm, at MR = MC.
- One point is earned for identifying price, Pm, above Qm on the demand curve.
- One point is earned for shading the area of economic loss.
- One point is earned for identifying the allocatively efficient quantity, Qe, at MC = D.

**Part B**

One point is earned for stating the total revenue would decrease because the demand is price elastic in that range of the demand curve where MR > 0.

| 0 | 1 ✓ |
|---|---|

The student earns all of the following points:

- One point is earned for stating the total revenue would decrease because the demand is price elastic in that range of the demand curve where MR > 0.

**Part C**

**2 Points**

- One point is earned for stating that the quantity will increase because the subsidy will cause the MC curve to shift downward and intersect the MR curve at a larger quantity.
- One point is earned for stating that the consumer surplus will increase.

| 0 | 1 | 2 ✓ |
|---|---|---|

The student earns all of the following points:

- One point is earned for stating that the quantity will increase because the subsidy will cause the MC curve to shift downward and intersect the MR curve at a larger quantity.
- One point is earned for stating that the consumer surplus will increase.

**Part D**

**2 Parts**

- One point is earned for stating that the deadweight loss will not change because the lump-sum subsidy does not change the profit-maximizing quantity.
- One point is earned for stating that economic losses will decrease.

| 0 | 1 | 2 ✓ |
|---|---|---|

The student earns all of the following points:

- One point is earned for stating that the deadweight loss will not change because the lump-sum subsidy does not change the profit-maximizing quantity.
- One point is earned for stating that economic losses will decrease.

# Unit 2 Practice Questions - ALL

**160.** Assume unusually cold weather destroys some of a nation's strawberry crop, which results in an increase in total revenue for strawberry producers. Which of the following must be true?

(A) The market supply of strawberries is elastic.
(B) The market supply of strawberries is inelastic.
(C) The market demand for strawberries is elastic.
(D) The market demand for strawberries is unit elastic.
(E) The market demand for strawberries is inelastic. ✓

**Answer E**

Correct. When unusually cold weather causes a leftward shift of the supply curve for strawberries, the price of strawberries increases, and the quantity of strawberries decreases. When price elasticity of demand is inelastic, the percentage decrease in quantity demanded is less than the percentage increase in price; this causes an increase in total revenue, since total revenue = price × quantity.

**161.** Which of the following would cause the supply of good X to become more elastic?

(A) Greater availability of substitutes for good X
(B) Increased prices of inputs required to produce good X
(C) The ability to easily reallocate inputs to production of good X ✓
(D) A short time frame for making production decisions
(E) More elastic demand for good X

**Answer C**

Correct. Elasticity is a measure of responsiveness of quantity supplied to changes in price. The ability to reallocate resources easily allows producers to respond to changes in price quickly. One of the determinants of the elasticity of supply is the time period it takes to respond to changes in market conditions. The ability to easily reallocate inputs lessens the time period to adjust and respond. Thus, supply becomes more elastic.

**162.**

**The supply schedule gives two points on a market supply curve.**

| Price | Quantity Supplied |
|---|---|
| $10 | 50 |
| $20 | 60 |

Which of the following is true about the supply curve between the given points?

(A) The supply curve is inelastic, because the percentage change in the price is greater than the percentage change in the quantity supplied. ✓
(B) The supply curve is unit elastic, because the change in price is $10 and the change in quantity supplied is 10 units.
(C) The supply curve is perfectly elastic, because the change in price is $10 and the change in quantity supplied is 10 units.
(D) The supply curve is elastic, because the price elasticity of supply is equal to 10.
(E) The supply curve is unit elastic, because the price elasticity of supply is equal to 1.

**Answer A**

Correct. Recognizing percentage changes is what matters for elasticity. The supply is inelastic. It can be determined by comparing the relative changes in price and quantity. Price increases by 100 percent, and the quantity supplied increases by 20 percent. Thus, 20 divided by 100 is equal to 0.2, which is inelastic.

# Unit 2 Practice Questions - ALL

**163.**

a. The table below gives the quantity of good X demanded and supplied at various prices.

| Price (dollars) | Quantity Demanded (units) | Quantity Supplied (units) |
|---|---|---|
| 30 | 1 | 3 |
| 20 | 3 | 3 |
| 10 | 4 | 3 |

i. Is the demand for good X relatively elastic, relatively inelastic, unit elastic, perfectly elastic, or perfectly inelastic when the price decreases from $30 to$ 20 ? Explain.

ii. Is the supply of good X relatively elastic, relatively inelastic, unit elastic, perfectly elastic, or perfectly inelastic when the price decreases from $30 to 20$ ? Explain.

iii. If a per-unit tax is imposed on good X, how is the burden of the tax distributed between the buyers and sellers of good X?

b. Assume that the income elasticity of demand for good Y is –2. Using a correctly labeled graph of the market for good Y, show the effect of a significant increase in income on the equilibrium price of good Y in the short run.

Respond to all parts of the question.

**Part A**

3 points:

- One point is earned for stating that the demand for good X is relatively elastic, because the elasticity coefficient > 1 OR because total revenue rises as price decreases from $30 to 20$.
- One point is earned for stating that supply is perfectly inelastic, because there is no change in the quantity supplied as the price changes OR because the supply elasticity is zero.
- One point is earned for stating that all of the burden of a per-unit tax falls on sellers.

| 0 | 1 | 2 | 3 ✓ |
|---|---|---|---|

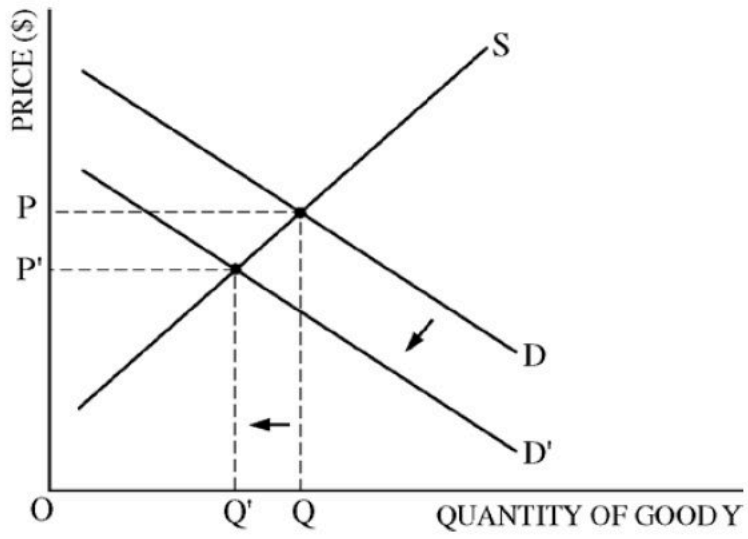
Student receives 3/3 point(s)

3 points:

- One point is earned for stating that the demand for good X is relatively elastic, because the elasticity coefficient > 1 OR because total revenue rises as price decreases from $30 to 20$.
- One point is earned for stating that supply is perfectly inelastic, because there is no change in the quantity supplied as the price changes OR because the supply elasticity is zero.
- One point is earned for stating that all of the burden of a per-unit tax falls on sellers.

**Part B**

# Unit 2 Practice Questions - ALL

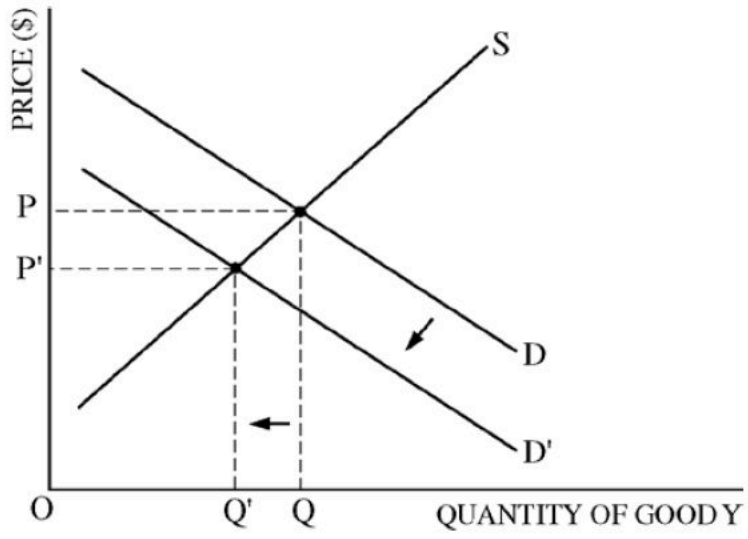



2 points:

- One point is earned for a correctly labeled graph of supply and demand.
- One point is earned for showing a leftward shift of the demand curve and a decrease in the equilibrium price.

| 0 | 1 | 2 ✓ |
|---|---|---|

Student receives 2/2 point(s)




2 points:

- One point is earned for a correctly labeled graph of supply and demand.
- One point is earned for showing a leftward shift of the demand curve and a decrease in the equilibrium price.

# Unit 2 Practice Questions - ALL

**164.** The table shows the market supply schedule for a good.

| Price ($) | Quantity Supplied |
|---|---|
| 12 | 60 |
| 14 | 75 |
| 16 | 90 |
| 18 | 120 |

When the price changes from $14 to 16$, the supply in this range is

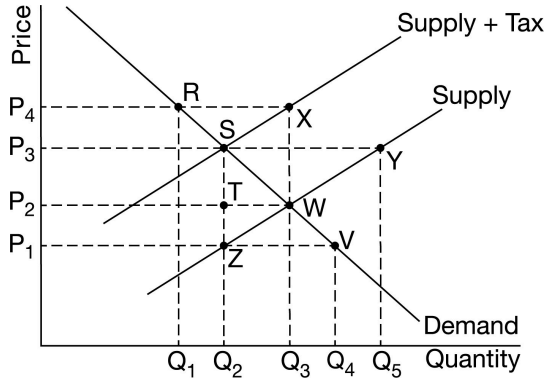
(A) elastic ✓
(B) inelastic
(C) unit elastic
(D) perfectly elastic
(E) perfectly inelastic

**Answer A**

Correct. In this example, an increase in price from $14 to 16$ resulted in an increase in quantity supplied from 75 units to 90 units. Price elasticity of supply is equal to the percentage change in the quantity supplied $\left(\frac{90-75}{75} \times 100 = 20\%\right)$ divided by the percentage change in price $\left(\frac{16-14}{14} \times 100 = 14.29\%\right)$, so the elasticity coefficient is equal to $\frac{20\%}{14.29\%} = 1.4$. Since the absolute value of the price elasticity of supply coefficient is greater than 1, supply is elastic over this range of the supply curve.

# Unit 2 Practice Questions - ALL

**165.** *Include correctly labeled diagrams, if useful or required, in explaining your answers. A correctly labeled diagram must have all axes and curves clearly labeled and must show directional changes. If the question prompts you to "Calculate," you must show how you arrived at your final answer.*




Hats are produced in a perfectly competitive industry, and the government imposes a per-unit sales tax on hats.

(a) Using the labeling from the graph, identify each of the following.

(i) The after-tax price paid by consumers and the after-tax quantity

(ii) The area representing the total tax revenue received by the government

(b) Now assume instead that the demand for hats is perfectly inelastic at $Q_3$, while the supply and the per-unit tax remain unchanged.

(i) Will the after-tax price paid by consumers be higher, lower, or the same compared to the price in your answer to part (a)(i) ?

(ii) Will the total tax revenue received by the government be higher, lower, or the same compared to the tax revenue in your answer to part (a)(ii) ? Explain.

(c) If the demand for hats remains perfectly inelastic at $Q_3$ and the per-unit sales tax is reduced, will producer surplus increase, decrease, or stay the same? Explain.

Respond to all parts of the question.

**Part A**

Select a point value to view scoring criteria, solutions, and/or examples and to score the response.

The response must use appropriate labels from the graph.

| 0 | 1 | 2 ✓ |
|---|---|---|

The response does one of the following:

- ☐ Identifies the after-tax price paid by consumers as $P_3$ and the after-tax quantity as $Q_2$ .
- ☐ Identifies the area representing the total tax revenue as one of the following.
  - $P_1P_3SZ$
  - $(P_3 \times Q_2) - (P_1 \times Q_2)$
  - $(P_3 - P_1) \times Q_2$

**Part B**

Select a point value to view scoring criteria, solutions, and/or examples and to score the response.

| 0 | 1 | 2 ✓ |
|---|---|---|

The response does both of the following:

- ☐ States that the price paid by consumers will be higher.
- ☐ States that the tax revenue received by the government will be higher because the tax does not reduce the quantity purchased when the demand is perfectly inelastic, while the quantity does fall when demand is downward sloping (i.e., $Q_3 > Q_2$).

**Part C**

Select a point value to view scoring criteria, solutions, and/or examples and to score the response.

# Unit 2 Practice Questions - ALL

| 0 | 1 ✓ |
|---|---|

The response states that the producer surplus will stay the same and explains that this is because both the price received by sellers ($P_2$) and the quantity sold ($Q_3$) do not change. It is also acceptable to explain that producer surplus stays the same because the consumer bears the full burden of the tax.

**166.** If the value of the price elasticity of supply for a product is 0.5, which of the following statements is correct?

(A) A 10 percent increase in the price of the product will decrease the quantity supplied by 5 percent.
(B) A 10 percent increase in the price of the product will decrease the quantity supplied by 20 percent.
(C) A 10 percent increase in the price of the product will increase the quantity supplied by 20 percent.
(D) A 20 percent decrease in the price of the product will decrease the quantity supplied by 10 percent. ✓
(E) A 20 percent decrease in the price of the product will decrease the quantity supplied by 40 percent.

**Answer D**

Correct. The formula for the price elasticity of supply is given by percentage change in quantity supplied/percentage change in price. Therefore, when the price elasticity of supply is 0.5, a 20 percent decrease in price results in a 10 percent decrease in quantity supplied.

**167.** A market supply curve is more elastic in the long run than in the short run because

(A) producers' marginal costs are increasing
(B) the quantity demanded increases at a steady rate
(C) there are no fixed inputs in the long run ✓
(D) of constant returns to scale in production
(E) of diseconomies of scale in production

**Answer C**

Correct. Since there are no fixed inputs in the long run, firms can more easily expand or contract their operations in the long run. In the long run, all inputs, including land and physical capital, are variable.

**168.** Toby's Toy Trains produces train sets in a monopolistically competitive market. If Toby increases the price of a train set by 5 percent, causing a 10 percent decrease in the quantity demanded of train sets, which of the following will occur?

(A) Toby's total revenue will increase.
(B) Toby's total revenue will decrease. ✓
(C) Toby's total revenue will remain the same.
(D) The demand for Toby's train sets will increase.
(E) The demand for Toby's train sets will decrease.

**Answer B**

Correct. The price elasticity of demand is given by the ratio of percentage change in quantity demanded to percentage change in price. In this example, the absolute value of the price elasticity of demand is $\frac{10\%}{5\%} = 2$. Over the elastic region of the demand curve (that is, when the absolute value of the elasticity coefficient is greater than absolute value of 1), an increase in price will cause a decrease in Toby's total revenue.

# Unit 2 Practice Questions - ALL

**169.** Include correctly labeled diagrams, if useful or required, in explaining your answers. A correctly labeled diagram must have all axes and curves clearly labeled and must show directional changes. If the question prompts you to "Calculate," you must show how you arrived at your final answer.

AirCab is the only airline that flies to and from a small island nation. It is currently operating while earning short-run negative economic profit.

(a) Draw a correctly labeled graph for AirCab and show each of the following.

(i) The profit-maximizing quantity of flights, labeled $Q_F$
(ii) The profit-maximizing price charged by AirCab, labeled $P_F$

(b) Will the deadweight loss change if AirCab were to earn positive economic profit because of a decrease in fixed costs? Explain.

(c) Assume the government wants AirCab to provide the allocatively efficient quantity of flights.

(i) Which of the following would best achieve that objective: a lump-sum tax, a per-unit tax, a per-unit subsidy, or a price floor?
(ii) On your graph in part (a), show the quantity, labeled $Q_G$, and the price, labeled $P_G$, consistent with allocative efficiency in the market for AirCab flights.

(d) Assume the cross-price elasticity of demand between AirCab's flights and Good L is $+1.4$. If the price of Good L decreases by $2\%$, by how much will the quantity of AirCab flights change?

(e) Suppose the airports out of which AirCab flies decrease the landing fee they charge for each of AirCab's flights.

(i) How will this impact AirCab's profit-maximizing quantity of flights as compared to $Q_F$? Explain.
(ii) How will this impact AirCab's total revenue? Explain.

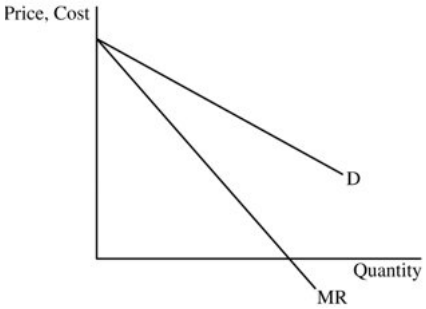
**Part A**

Select a point value to view scoring criteria, solutions, and/or examples and to score the response.

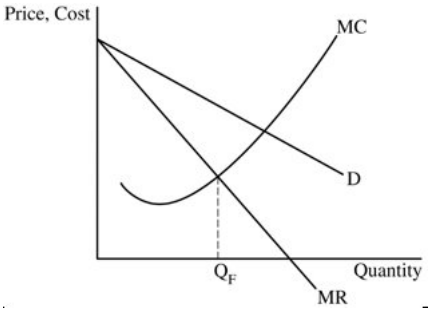
| 0 | 1 | 2 | 3 | 4 ✓ |
|---|---|---|---|---|

The response accurately includes four of the criteria below.

☐ A correctly labeled graph for a monopoly showing downward-sloping demand (D) and marginal revenue (MR) curves with the MR curve below the demand curve.

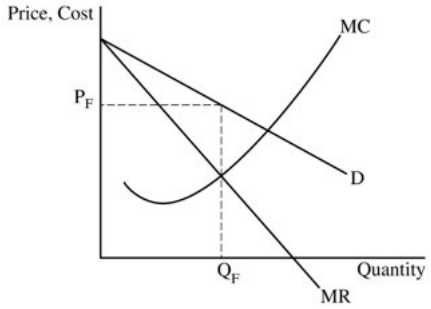



☐ Shows an upward-sloping marginal cost (MC) curve and the profit-maximizing quantity, labeled $Q_F$, where $MR = MC$.

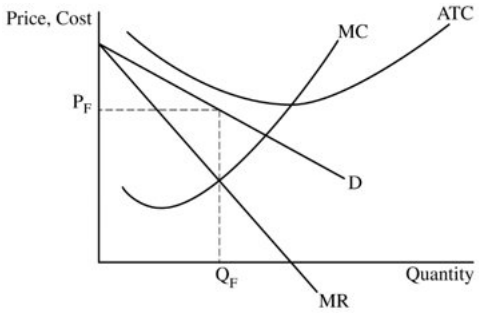



☐ Shows the profit-maximizing price, labeled $P_F$, from the demand curve at $Q_F$.

# Unit 2 Practice Questions - ALL




Shows the average total cost (ATC) curve above the demand curve at $Q_F$ and shows the MC curve passing through the minimum point of the ATC curve.




**Part B**

Select a point value to view scoring criteria, solutions, and/or examples and to score the response.

| 0 | 1 ✓ |
|---|---|

The response accurately includes the criterion below.

- States that the deadweight loss will not change and explains that changes in fixed costs have no effect on the monopolist's profit-maximizing quantity because the marginal cost curve will not change.

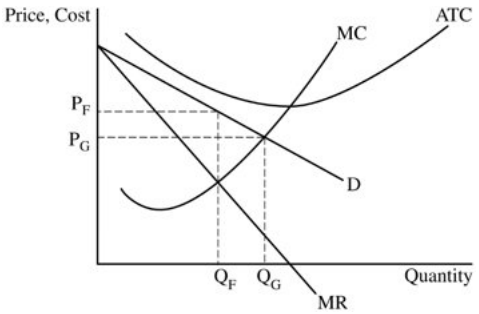
**Part C**

Select a point value to view scoring criteria, solutions, and/or examples and to score the response.

| 0 | 1 | 2 ✓ |
|---|---|---|

The response accurately includes two of the criteria below.

- States that a per-unit subsidy would best achieve the objective.
- On the graph in part (a), shows the quantity and price consistent with allocative efficiency, labeled $Q_G$ and $P_G$ respectively, where the MC curve intersects the demand curve.



# Unit 2 Practice Questions - ALL

**Part D**

Select a point value to view scoring criteria, solutions, and/or examples and to score the response.

| 0 | 1 ✓ |
|---|---|

The response accurately includes the criterion below.

- [ ] States that the quantity of AirCab flights will decrease by 2.8%.

**Part E**

Select a point value to view scoring criteria, solutions, and/or examples and to score the response.

| 0 | 1 | 2 ✓ |
|---|---|---|

The response accurately includes two of the criteria below.

- [ ] States that the profit-maximizing quantity of flights will increase and explains that the marginal cost curve will shift downward.
- [ ] States that AirCab's total revenue will increase and explains with **ONE** of the following.
  · As a monopoly, AirCab operates on the elastic portion of the demand curve.
  · AirCab's MR is positive at the new profit-maximizing quantity.

# Unit 2 Practice Questions - ALL

**170.** ***Include correctly labeled diagrams, if useful or required, in explaining your answers. A correctly labeled diagram must have all axes and curves clearly labeled and must show directional changes. If the question prompts you to "Calculate," you must show how you arrived at your final answer.***

*The table below shows the total costs faced by Allura's Little Robotics Company for different quantities of Good S sold.*

| *Quantity* | *Total Cost* |
|---|---|
| 0 | $100 |
| 1 | $136 |
| 2 | $180 |
| 3 | $228 |
| 4 | $280 |
| 5 | $336 |
| 6 | $396 |
| 7 | $460 |
| 8 | $528 |
| 9 | $600 |
| 10 | $680 |

Allura's Little Robotics Company sells Good S in a perfectly competitive market with a downward-sloping demand curve and an upward-sloping supply curve. The market price is $62 per unit.

(a) Calculate the average fixed cost of producing 2 units. Show your work.

(b) Identify the profit-maximizing quantity. Explain using marginal analysis.

(c) Calculate the economic profit at the profit-maximizing quantity you identified in part (b). Show your work.

(d) Based on your answer to part (c), will the number of firms in the industry increase, decrease, or stay the same in the long run? Explain.

(e) Based on your answer to part (c), will the market price increase, decrease, or stay the same in the long run? Explain.

(f) The income elasticity of demand for Good S is $-0.5$, and the cross-price elasticity of demand for toy robots with respect to the price of Good S is 0.8. Based on your answer to part (e), what will happen to the demand for toy robots? Explain.

(g) Now assume that the market in which Allura's Little Robotics Company operates is in long-run equilibrium at a price of $65 per unit.
(i) Suppose shipping costs per order for Allura's Little Robotics Company decrease. Will the profit-maximizing quantity of Good S for Allura's Little Robotics Company increase, decrease, or stay the same in the short run? Explain.
(ii) Instead suppose the government imposes a price ceiling of $60 on the market for Good S. Will total economic surplus in the market for Good S increase, decrease, or stay the same in the short run as a result of the price ceiling? Explain.

Respond to all parts of the question.

**Part A**

Select a point value to view scoring criteria, solutions, and/or examples and to score the response.

| 0 | 1 ✓ |
|---|---|

The response calculates the average fixed cost as $50 and shows the work.

$AFC = \frac{TFC}{Q} = \frac{\$100}{2} = \$50$

**Part B**

Select a point value to view scoring criteria, solutions, and/or examples and to score the response.

| 0 | 1 ✓ |
|---|---|

The response identifies the profit-maximizing quantity as 6 units and explains that the 6th unit is the last unit where the marginal revenue ( $62) is greater than the marginal cost ($60); the firm will not produce the 7th unit because the marginal cost of producing it ( $64) is greater than the marginal revenue earned ($62).

**Part C**

Select a point value to view scoring criteria, solutions, and/or examples and to score the response.

# Unit 2 Practice Questions - ALL

| 0 | 1 ✓ |
|---|---|

The response calculates the economic profit as $-\$24$ and shows the work.

$Economic\ Profit = TR - TC = 6\,(\$62) - \$396 = -\$24$

**Part D**

Select a point value to view scoring criteria, solutions, and/or examples and to score the response.

| 0 | 1 ✓ |
|---|---|

The response states that the number of firms in the industry will decrease and explains that negative economic profit will cause firms to exit the industry.

**Part E**

Select a point value to view scoring criteria, solutions, and/or examples and to score the response.

| 0 | 1 ✓ |
|---|---|

The response states that the market price will increase and explains that with the exit of firms, the market supply will decrease, causing the price to increase.

**Part F**

Select a point value to view scoring criteria, solutions, and/or examples and to score the response.

| 0 | 1 ✓ |
|---|---|

The response states that that demand for toy robots will increase and explains that the positive cross-price elasticity of demand for toy robots with respect to the price of Good S means that the goods are substitutes; therefore, an increase in the price of Good S will lead to an increase in the demand for toy robots.

**Part G**

Select a point value to view scoring criteria, solutions, and/or examples and to score the response.

| 0 | 1 | 2 ✓ |
|---|---|---|

The response does both of the following:

· States that the profit-maximizing quantity of Good S will increase and explains that shipping costs per order are a variable cost, so a decrease in shipping costs per order will shift the marginal cost curve downward at each quantity so that marginal cost will intersect marginal revenue at a higher quantity.

· States that total economic surplus will decrease and explains that a price ceiling below the equilibrium price is binding and the quantity supplied will decrease, therefore decreasing total surplus.

# Unit 2 Practice Questions - ALL

**171. Include correctly labeled diagrams, if useful or required, in explaining your answers. A correctly labeled diagram must have all axes and curves clearly labeled and must show directional changes. If the question prompts you to "Calculate," you must show how you arrived at your final answer.**

The table below shows the total benefit, in dollars, that Andrew derives from consuming two goods, cheeseburgers and Good J.

| Quantity of Cheeseburgers | Total Benefit of Cheeseburgers | Quantity of Good J | Total Benefit of Good J |
|---|---|---|---|
| 0 | $0 | 0 | $0 |
| 1 | *$40* | *1* | *$30* |
| *2* | *$70* | *2* | *$50* |
| *3* | *$90* | *3* | *$65* |
| *4* | *$100* | *4* | *$75* |
| *5* | *$105* | *5* | *$80* |
| *6* | *$105* | *6* | *$83* |

Andrew has a limited weekly income of $65, and he spends it all on cheeseburgers and Good J. Assume the price of each cheeseburger is $10 and the price of Good J is $5 per unit.

(a) Calculate Andrew's consumer surplus from the second unit of Good J. Show your work.

(b) Identify the quantity of cheeseburgers and the quantity of Good J that will maximize Andrew's total benefit given his weekly income. Explain using marginal analysis.

(c) If Andrew's weekly income increases from $65 to $75, would Andrew be able to buy 5 cheeseburgers and 6 units of Good J? Explain using numbers.

(d) Suppose the price of Good J decreases by 10% and Andrew buys 12% more of Good J and 8% more of Good S. Based on this change, identify whether Good J and Good S are substitutes, complements, or not related. Explain using numbers.

(e) Suppose instead that cheeseburgers are produced in a perfectly competitive market and the price of beef, an input to the production of cheeseburgers, decreases. If cheeseburgers are a normal good, will the quantity of cheeseburgers that will maximize Andrew's total benefit increase, decrease, or stay the same? Explain.

Respond to all parts of the question.

**Part A**

Select a point value to view scoring criteria, solutions, and/or examples and to score the response.

| 0 | 1 ✓ |
|---|---|

The response calculates consumer surplus as $15 and shows the work.

$$\text{Consumer Surplus} = \text{Marginal Benefit} - \text{Price} = \$20 - 5 = \$15$$

**Part B**

Select a point value to view scoring criteria, solutions, and/or examples and to score the response.

| 0 | 1 ✓ |
|---|---|

The response identifies that 4 cheeseburgers and 5 units of Good J will maximize Andrew's total benefit given his weekly income of $65 and explains that for the last unit of each good consumed the ratio of the marginal benefit to the price of cheeseburgers (1) is equal to the ratio of the marginal benefit to the price of Good J (1), or

$$\frac{MB_{Frisbees}}{Price_{Frisbees}} = \frac{MB_{Good\ J}}{Price_{Good\ J}}$$

$$\frac{\$10}{\$10} = \frac{\$5}{\$5}$$

$$1 = 1$$

**Part C**

Select a point value to view scoring criteria, solutions, and/or examples and to score the response.

| 0 | 1 ✓ |
|---|---|

# Unit 2 Practice Questions - ALL

The response states that no, , Andrew would not be able to buy 5 cheeseburgers and 6 units of Good J and explains that his total expenditures would be \$80 ( $= \$10 \times 5 + \$5 \times 6$), which is greater than his weekly income of \$75.

**Part D**

Select a point value to view scoring criteria, solutions, and/or examples and to score the response.

| 0 | 1 ✓ |
|---|---|

The response identifies that Good J and Good S are complements and explains that the cross-price elasticity of demand is negative because a 10% decrease in the price of Good J led to an 8% increase in the demand for Good S.

**Part E**

Select a point value to view scoring criteria, solutions, and/or examples and to score the response.

| 0 | 1 ✓ |
|---|---|

The response states that the quantity of cheeseburgers that will maximize Andrew's total benefit will increase and explains that a decrease in the price of an input to production will increase the supply of cheeseburgers, which will decrease the price of cheeseburgers and increase the marginal benefit per dollar spent for each additional unit consumed.

**172.** If a 10 percent increase in the price of good X results in a 20 percent decrease in the quantity of good Y demanded, which of the following is true?

(A) Good X and good Y are complementary goods, and the cross-price elasticity is $-0.5$ .

(B) Good X and good Y are substitute goods, and the income elasticity is $+2$ .

(C) Good X and good Y are complementary goods, and the cross-price elasticity is $-2$ . ✓

(D) Good X and good Y are normal goods, and the income elasticity is $+2$ .

(E) Good X and good Y are substitute goods, and the cross-price elasticity is $-2$ .

**Answer C**

Correct. The cross-price elasticity between good X and Y $(\mathrm{CRXY})$ can be calculated as the ratio of the percentage change in the quantity of good Y to the percentage change in the price of good X. Thus, $\mathrm{CRXY} = (-20\,\% / 10\,\%) = -2$. The cross-price elasticity between good X and good Y is negative implying that X and Y are complementary goods.

# Unit 2 Practice Questions - ALL

**173.** *Include correctly labeled diagrams, if useful or required, in explaining your answers. A correctly labeled diagram must have all axes and curves clearly labeled and must show directional changes. If the question prompts you to "Calculate," you must show how you arrived at your final answer.*

The following is a table showing Dana's marginal benefit from purchasing bottles of water and good X from a grocery store.

| Quantity of Water(in bottles) | Marginal Benefit of Water(in dollars) | Quantity of Good X(in units) | Marginal Benefit of Good X(in dollars) |
|---|---|---|---|
| 1 | 24 | 1 | 24 |
| 2 | 18 | 2 | 18 |
| 3 | 12 | 3 | 12 |
| 4 | 6 | 4 | 6 |
| 5 | 3 | 5 | 3 |

(a) What is Dana's total benefit from purchasing 2 bottles of water and 1 unit of good X? Show your work.

(b) Assume the price of a unit of good X is $5. Calculate the total consumer surplus if Dana purchases 3 units of good X. Show your work.

(c) Now assume the price of a bottle of water is $3 and the price of a unit of good X is $6. Dana spends her entire budget of $30 on bottles of water and good X.

(i) Explain why Dana does not maximize her benefit when she purchases 2 bottles of water and 4 units of good X. Use marginal analysis to explain your answer.

(ii) What are the optimal quantities of good X and bottles of water at these prices?

(iii) Suppose the price of a unit of good X drops to $3. Calculate Dana's cross-price elasticity of demand for bottles of water with respect to the price of good X, and state whether the two goods are substitutes or complements. Show your work.

Respond to all parts of the question.

**Part A**

Select a point value to view scoring criteria, solutions, and/or examples and to score the response.

The response must show appropriate work in order to receive the point.

| 0 | 1 ✓ |
|---|---|

The response calculates Dana's total benefit from purchasing 2 bottles of water and 1 unit of good X as $66 and shows the work.

- $\$24 + \$18 + \$24 = \$66$
- $\$42 + \$24 = \$66$

**Part B**

Select a point value to view scoring criteria, solutions, and/or examples and to score the response.

The response must show appropriate work in order to receive the point.

| 0 | 1 ✓ |
|---|---|

The response calculates Dana's total consumer surplus from purchasing 3 units of good X as $39 and shows the work.

- $(\$24 - \$5) + (\$18 - \$5) + (\$12 - \$5) = \$39$
- $\$54 - \$15 = \$39$

**Part C**

Select a point value to view scoring criteria, solutions, and/or examples and to score the response.

The response to part (c) (i) must use marginal analysis in the explanation in order to receive the point.

The response to part (c) (iii) must show appropriate work in order to receive the point.

The response to part (c) (iii) must be consistent with (c)(ii).

# Unit 2 Practice Questions - ALL

| 0 | 1 | 2 | 3 ✓ |
|---|---|---|---|

The response does all the following.

- [ ] Explains that Dana does not maximize her benefit because the marginal utility per dollar spent on bottles of water is greater than the marginal utility per dollar spent on good X.
  ($18/\$3 > 6/\$6$; OR $6 > 1$; OR $6 \neq 1$; OR $MB_W/P_W > MB_X/P_X$)
- [ ] States that the optimal quantities of good X and bottles of water are 3 units and 4 bottles respectively.
- [ ] Calculates the cross-price elasticity of demand for bottles of water with respect to the price of good X, shows the work, and states that the goods are complements.
  ($\%$ change in the quantity of bottles of water) / ($\%$ change in the price of good X)
  $= (25\% / -50\%) = -0.5$
  (Using the mid-point formula is also acceptable: $(1/4.5) / (-3/4.5) = -0.33$

# Unit 2 Practice Questions - ALL

**174. Include correctly labeled diagrams, if useful or required, in explaining your answers. A correctly labeled diagram must have all axes and curves clearly labeled and must show directional changes. If the question prompts you to "Calculate," you must show how you arrived at your final answer.**

The table below shows the total benefit, in dollars, that Courtney derives from consuming two goods, Good F and candy bars.

| Quantity of Good F | Total Benefit of Good F | Quantity of Candy Bars | Total Benefit of Candy Bars |
|---|---|---|---|
| 0 | $0 | 0 | $0 |
| 1 | $40 | 1 | $80 |
| 2 | $70 | 2 | $120 |
| 3 | $90 | *3* | *$140* |
| *4* | *$100* | *4* | *$152* |
| *5* | *$103* | *5* | *$156* |
| *6* | *$105* | *6* | *$156* |

Courtney has a limited weekly income of $20, and she spends it all on Good F and candy bars. Assume the price of Good F is $2 per unit and the price of a candy bar is $4.

(a) Identify the quantity of Good F and the quantity of candy bars that will maximize Courtney's total benefit given her weekly income. Explain using marginal analysis.

(b) Calculate Courtney's consumer surplus from the fourth candy bar. Show your work.

(c) If Courtney's weekly income decreases from $20 to $18, would Courtney be able to buy 5 units of Good F and 2 candy bars? Explain using numbers.

(d) Suppose that candy bars are produced in a perfectly competitive market and the price of sugar, an input to the production of candy bars, increases. If candy bars are a normal good, will the quantity of candy bars that will maximize Courtney's total benefit increase, decrease, or stay the same? Explain.

(e) Suppose instead that the price of Good F increases by 9% and Courtney buys 6% less of Good F and 3% less of Good W. Based on this change, identify whether Good F and Good W are substitutes, complements, or not related. Explain using numbers.

Respond to all parts of the question.

**Part A**

Select a point value to view scoring criteria, solutions, and/or examples and to score the response.

| 0 | 1 ✓ |
|---|---|

The response identifies that 4 units of Good F and 3 candy bars will maximize Courtney's total benefit given her weekly income of $20 and explains that for the last unit of each good consumed the ratio of the marginal benefit to the price of Good F (5) is equal to the ratio of the marginal benefit to the price of candy bars (5), or

$$\frac{MB_{Good\ F}}{Price_{Good\ F}} = \frac{MB_{Candy\ Bars}}{Price_{Candy\ Bars}}$$

$$\frac{\$10}{\$2} = \frac{\$20}{\$4}$$

$$5 = 5$$

**Part B**

Select a point value to view scoring criteria, solutions, and/or examples and to score the response.

| 0 | 1 ✓ |
|---|---|

The response calculates consumer surplus as $8 and shows the work.

$$\text{Consumer Surplus} = \text{Marginal Benefit} - \text{Price} = \ \$12 - \$4 = \$8$$

**Part C**

Select a point value to view scoring criteria, solutions, and/or examples and to score the response.

| 0 | 1 ✓ |
|---|---|

# Unit 2 Practice Questions - ALL

The response states that yes, Courtney would be able to buy 5 units of Good F and 2 candy bars and explains that her total expenditures would be \$18 $(= \$2 \times 5 + \$4 \times 2)$, which is equal to her weekly income of \$18.

**Part D**

Select a point value to view scoring criteria, solutions, and/or examples and to score the response.

| 0 | 1 ✓ |
|---|---|

The response states that the quantity of candy bars that will maximize Courtney's total benefit will decrease and explains that an increase in the price of an input to the production of candy bars would decrease the supply of candy bars, which would increase the price of candy bars and decrease the marginal benefit per dollar spent for each additional unit consumed.

**Part E**

Select a point value to view scoring criteria, solutions, and/or examples and to score the response.

| 0 | 1 ✓ |
|---|---|

The response identifies Good F and Good W as complements and explains that the cross-price elasticity of demand is negative because a 9% increase in the price of Good F led to a 3% decrease in the demand for Good W.

**175.** At the current prices of goods X and Y, the quantity demanded of good X is 10 units, and the quantity demanded of good Y is 5 units. The cross-price elasticity of demand between goods X and Y is 0.6. A 10 percent increase in the price of good Y will result in which of the following?

(A) A 0.5 percent decrease in the quantity demanded of good Y.
(B) A 3 percent increase in the quantity demanded of good Y.
(C) A 1 percent increase in the quantity demanded of good X.
(D) A 6 percent increase in the quantity demanded of good X. ✓
(E) A 60 percent increase in the quantity demanded of good X.

**Answer D**

Correct. The cross-price elasticity of demand between goods X and Y is 0.6, which is the ratio of the percentage change in the quantity of good X demanded to the percentage change in the price of good Y. This implies that the 10 percent increase in the price of good Y will result in a 6 percent increase in the quantity demanded of good X. This value is obtained by multiplying the cross-price elasticity by the percentage change in the price of good Y. That is, 0.6 times 10 percent equals 6 percent.

**176.** The cross-price elasticity of demand between goods J and K is $-3$. A 20 percent decrease in the price of good K will result in a

(A) 3 percent decrease in the quantity demanded of good K
(B) 15 percent decrease in the quantity demanded of good K
(C) 6 percent increase in the quantity demanded of good J
(D) 12 percent increase in the quantity demanded of good J
(E) 60 percent increase in the quantity demanded of good J ✓

**Answer E**

Correct. The cross-price elasticity of demand between goods J and K is $-3$, which is the percentage change in the quantity demanded of good J divided by the percentage change in the price of good K. This implies that the 20 percent decrease in the price of good K will result in a 60 percent increase in the quantity demanded of good J, which is calculated as $-3$ times $-20$ percent equals 60 percent.

# Unit 2 Practice Questions - ALL

**The table below shows the values of different elasticities of demand for good J at the market equilibrium price.**

| | |
|---|---|
| Price elasticity (absolute value) | 0.75 |
| Cross-price elasticity with respect to good X | 0.8 |
| Cross-price elasticity with respect to good Y | 2 |
| Cross-price elasticity with respect to good Z | $-2.5$ |
| Income elasticity | $-0.5$ |

**177.** Which of the following is true about good J?

(A) Good J is a normal good.
(B) Good J's demand is elastic.
(C) Good J is an inferior good. ✓
(D) Good J is a complement in consumption to good Y.
(E) Good J is a substitute in consumption to good Z.

**Answer C**

Correct. Whether a good is inferior or normal is based on the sign of the income elasticity – with a positive sign indicating that the good is a normal good and a negative sign indicating that the good is an inferior good. The income elasticity of good J is negative $(-0.5)$; therefore, good J is an inferior good.

**178.** Which of the following would result in the greatest rightward shift of the demand curve for good J?

(A) A $50\%$ decrease in the price of good J.
(B) A $20\%$ increase in the price of good X.
(C) A $10\%$ increase in the price of good Y. ✓
(D) A $10\%$ increase in the price of good Z.
(E) A $10\%$ decrease in income.

**Answer C**

Correct. Goods J and Y are substitutes in consumption since the cross-price elasticity with respect to good Y is positive. Therefore, a $10\%$ increase in the price of good Y will shift the demand for good J to the right by $20\%(=$ % change in price of good Y $\times$ cross-price elasticity with respect to good Y $= 10\% \times 2)$. This is the largest increase among the answer choices.

**179.** The cross-price elasticity of demand for Goods X and Y is $-2.8$. Based on this information, what is true about Good X and Good Y?

(A) Good X is a normal good and Good Y is an inferior good.
(B) The goods are inferior.
(C) The goods are substitutes.
(D) The goods are complements. ✓
(E) The goods have upward-sloping demand curves.

**Answer D**

Correct. A negative cross-price elasticity of demand coefficient indicates that Goods X and Y are complements. Since the two goods are consumed together, an increase in the price of one good will cause a decrease in the demand, and therefore the quantity demanded, for the other good.

# Unit 2 Practice Questions - ALL

**180.** Which of the following is true of the cross-price elasticity of demand?

(A) It can indicate if a good is a necessity or a luxury.
(B) It is greater than zero for two goods that are substitutes. ✓
(C) It is close to zero if the two goods are closely related.
(D) It is always negative because demand curves are downward sloping.
(E) It increases as income increases.

**181.** In relation to tacos, the cross-price elasticity of demand for Good X is negative. What would be the result if the price of tacos increases?

(A) There will be a movement up the demand curve for Good X because it is a complement to tacos.
(B) There will be a movement down the demand curve for Good X because it is a complement to tacos.
(C) The demand for Good X will increase because it is a substitute for tacos.
(D) The demand for Good X will decrease because it is a complement to tacos. ✓
(E) The demand for Good X will increase because tacos and Good X are normal goods.

**Answer D**

Correct. When the cross-price elasticity is negative, this means that the two products are complements. Therefore, an increase in the price of tacos will decrease the demand for Good X.

**182.** To determine whether two goods are complements, one would calculate the

(A) price elasticity of demand
(B) price elasticity of supply
(C) income elasticity of demand
(D) cross-price elasticity of demand ✓
(E) input-price elasticity of supply

# Unit 2 Practice Questions - ALL

**183. Include correctly labeled diagrams, if useful or required, in explaining your answers. A correctly labeled diagram must have all axes and curves clearly labeled and must show directional changes. If the question prompts you to "Calculate," you must show how you arrived at your final answer.**

The table below shows the total costs faced by Dave's General Store for different quantities of Good X sold.

| Quantity | Total Cost |
|---|---|
| 0 | $100 |
| 1 | $110 |
| 2 | $140 |
| 3 | $190 |
| 4 | $290 |
| 5 | $440 |
| 6 | $640 |
| 7 | $900 |
| 8 | $1,230 |
| 9 | $1,640 |
| 10 | $2,140 |

Dave's General Store sells Good X in a perfectly competitive market with a downward-sloping demand curve and an upward-sloping supply curve. The market price is $120 per unit.

(a) Calculate the average fixed cost of producing 5 units. Show your work.

(b) Identify the profit-maximizing quantity. Explain using marginal analysis.

(c) Calculate the economic profit at the profit-maximizing quantity you identified in part (b). Show your work.

(d) Based on your answer to part (c), will the number of firms in the industry increase, decrease, or stay the same in the long run? Explain.

(e) Based on your answer to part (c), will the market price increase, decrease, or stay the same in the long run? Explain.

(f) The income elasticity of demand for Good X is 2.5, and the cross-price elasticity of demand for shoes with respect to the price of Good X is $-0.4$ . Based on your answer to part (e), what will happen to the demand for shoes? Explain.

(g) Now assume that the market in which Dave's General Store operates is in long-run equilibrium.
(i) Suppose the rent paid by Dave's General Store decreases. Will Dave's General Store's profit-maximizing quantity of Good X increase, decrease, or stay the same in the short run? Explain.
(ii) Instead suppose Dave's General Store hires labor in a perfectly competitive market and the market wage increases. Will Dave's General Store's profit-maximizing quantity of Good X increase, decrease, or stay the same in the short run? Explain.

Respond to all parts of the question.

**Part A**

Select a point value to view scoring criteria, solutions, and/or examples and to score the response.

| 0 | 1 ✓ |
|---|---|

The response calculates the average fixed cost as $20 and shows the work.

$AFC = \frac{TFC}{Q} = \frac{\$100}{5} = \$20$

**Part B**

Select a point value to view scoring criteria, solutions, and/or examples and to score the response.

| 0 | 1 ✓ |
|---|---|

The response identifies the profit-maximizing quantity as 4 units and explains that the 4th unit is the last unit where the marginal revenue ( $120) is greater than the marginal cost ($100); the firm will not produce the 5th unit because the marginal cost of producing it ( $150) is greater than the marginal revenue earned ($120).

**Part C**

Select a point value to view scoring criteria, solutions, and/or examples and to score the response.

# Unit 2 Practice Questions - ALL

| 0 | 1 ✓ |
|---|---|

The response calculates the economic profit as $190 and shows the work.

$Economic\ Profit = TR - TC = 4\,(\$120) - \$290 = \$190$

**Part D**

Select a point value to view scoring criteria, solutions, and/or examples and to score the response.

| 0 | 1 ✓ |
|---|---|

The response states that the number of firms in the industry will increase and explains that positive economic profit will attract new firms to enter the industry.

**Part E**

Select a point value to view scoring criteria, solutions, and/or examples and to score the response.

| 0 | 1 ✓ |
|---|---|

The response states that the market price will decrease and explains that with the entry of firms, the market supply will increase, causing the price to decrease.

**Part F**

Select a point value to view scoring criteria, solutions, and/or examples and to score the response.

| 0 | 1 ✓ |
|---|---|

The response states that that the demand for shoes will increase and explains that the negative cross-price elasticity of demand for shoes with respect to the price of Good X means that the goods are complements; therefore, a decrease in the price of Good X will lead to an increase in the demand for shoes.

**Part G**

Select a point value to view scoring criteria, solutions, and/or examples and to score the response.

| 0 | 1 | 2 ✓ |
|---|---|---|

The response does both of the following:

· States that the profit-maximizing quantity of Good X will stay the same in the short run and explains that a change in fixed cost does not affect the marginal cost.

· States that the profit-maximizing quantity of Good X will decrease and explains that an increase in the market wage will increase the wage the firm pays its workers because the firm is a wage-taker in a perfectly competitive market; wages are a variable cost, so an increase in the wage will shift the marginal cost curve upward at each quantity so that marginal cost will intersect marginal revenue at a lower quantity.

**184.** The cross-price elasticity of demand between good X and good Z measures the percentage change in the quantity demanded of good X in response to a percentage change in

(A) the price of good X
(B) income
(C) the price of good Z ✓
(D) the supply of good Z
(E) total expenditures on good Z

# Unit 2 Practice Questions - ALL

**185.** When Tom's income increases from $\$100$ to $\$120$, the quantity of golf balls he purchases increases from $10$ to $12$. What is Tom's income elasticity of demand, and what type of good is a golf ball for Tom?

(A) Income elasticity of demand is $1$, and golf balls are a normal good for Tom. ✓

(B) Income elasticity of demand is $-1$, and golf balls are an inferior good for Tom.

(C) Income elasticity of demand is $10$, and golf balls are a normal good for Tom.

(D) Income elasticity of demand is $-10$, and golf balls are an inferior good for Tom.

(E) Income elasticity of demand is $20$, and golf balls are a normal good for Tom.

**Answer A**

Correct. Income elasticity is calculated as the percentage change in quantity demanded/percentage change in income. Tom's quantity demanded increased by $20\%[= (\frac{12-10}{10} \times 100)]$ and Tom's income increased by $20\%[= (\frac{120-100}{100} \times 100)]$. Thus, Tom's income elasticity of demand is $1[= \frac{20\%}{20\%}]$. A positive income elasticity of demand indicates that golf balls are a normal good.

# Unit 2 Practice Questions - ALL

**186. Include correctly labeled diagrams, if useful or required, in explaining your answers. A correctly labeled diagram must have all axes and curves clearly labeled and must show directional changes. If the question prompts you to "Calculate," you must show how you arrived at your final answer.**

The table below shows the total variable costs faced by Emily's Eye Care Store for different quantities of Good M sold.

| Quantity | Total Variable Cost |
|---|---|
| 1 | $20 |
| 2 | $25 |
| 3 | $35 |
| 4 | $50 |
| 5 | $70 |
| 6 | $95 |
| 7 | $125 |
| 8 | $160 |
| 9 | $200 |
| 10 | $245 |

Emily's Eye Care Store sells Good M in a perfectly competitive market with a downward-sloping demand curve and an upward-sloping supply curve. The market price is $33 per unit, and the total fixed cost is $30.

(a) Identify the profit-maximizing quantity. Explain using marginal analysis.

(b) Calculate the economic profit at the profit-maximizing quantity you identified in part (a). Show your work.

(c) Calculate the average fixed cost of producing 6 units. Show your work.

(d) Based on your answer to part (b), will the number of firms in the industry increase, decrease, or stay the same in the long run? Explain.

(e) Based on your answer to part (b), will the market price increase, decrease, or stay the same in the long run? Explain.

(f) The income elasticity of demand for Good M is 1.4, and the cross-price elasticity of demand for eyeglasses with respect to the price of Good M is $-0.75$. Based on your answer to part (e), what will happen to the demand for eyeglasses? Explain.

(g) Now assume that the market in which Emily's Eye Care Store operates is in long-run equilibrium at a price of $30 per unit.
(i) Suppose annual property taxes for Emily's Eye Care Store increase by $2,000. Will the profit-maximizing quantity of Good M for Emily's Eye Care Store increase, decrease, or stay the same in the short run? Explain.
(ii) Instead suppose the government imposes a price floor at $35 on the market for Good M. Will deadweight loss in the market for Good M increase, decrease, or stay the same in the short run as a result of the price floor? Explain.

Respond to all parts of the question.

**Part A**

Select a point value to view scoring criteria, solutions, and/or examples and to score the response.

| 0 | ✓ 1 |
|---|---|

The response identifies the profit-maximizing quantity as 7 units and explains that the 7th unit is the last unit where the marginal revenue ( $33) is greater than the marginal cost ($30); the firm will not produce the 8th unit because the marginal cost of producing it ( $35) is greater than the marginal revenue earned ($33).

**Part B**

Select a point value to view scoring criteria, solutions, and/or examples and to score the response.

| 0 | ✓ 1 |
|---|---|

The response calculates the economic profit as $76 and shows the work.

$Economic\ Profit = TR - TC = 7\,(\$33) - (\$125 + \$30) = \$76$

**Part C**

Select a point value to view scoring criteria, solutions, and/or examples and to score the response.

| 0 | ✓ 1 |
|---|---|

# Unit 2 Practice Questions - ALL

The response calculates the average fixed cost as $5 and shows the work.

$AFC = \frac{TFC}{Q} = \frac{\$30}{6} = \$5$

**Part D**

Select a point value to view scoring criteria, solutions, and/or examples and to score the response.

| 0 | 1 ✓ |
|---|---|

The response states that the number of firms in the industry will increase and explains that positive economic profit will attract new firms to enter the industry.

**Part E**

Select a point value to view scoring criteria, solutions, and/or examples and to score the response.

| 0 | 1 ✓ |
|---|---|

The response states that the market price will decrease and explains that with the entry of firms, the market supply will increase, causing the price to decrease.

**Part F**

Select a point value to view scoring criteria, solutions, and/or examples and to score the response.

| 0 | 1 ✓ |
|---|---|

The response states that that the demand for eyeglasses will increase and explains that the negative cross-price elasticity of demand for eyeglasses with respect to the price of Good M means that the goods are complements; therefore, a decrease in the price of Good M will lead to an increase in the demand for eyeglasses.

**Part G**

Select a point value to view scoring criteria, solutions, and/or examples and to score the response.

| 0 | 1 | 2 ✓ |
|---|---|---|

The response does both of the following:

· States that the profit-maximizing quantity of Good M will stay the same in the short run and explains that property taxes are a fixed cost and a change in fixed cost does not affect the marginal cost.

· States that deadweight loss will increase and explains that a price floor above the equilibrium price is binding and the quantity exchanged in the market will be limited by the quantity demanded, which is less than the equilibrium quantity, thus decreasing total economic surplus.

# Unit 2 Practice Questions - ALL

**187. Include correctly labeled diagrams, if useful or required, in explaining your answers. A correctly labeled diagram must have all axes and curves clearly labeled and must show directional changes. If the question prompts you to "Calculate," you must show how you arrived at your final answer.**

The table below shows the total costs faced by Faizah's Manufacturing Firm for different quantities of Good G sold.

| Quantity | Total Cost |
|---|---|
| 0 | $64 |
| 1 | $79 |
| 2 | $98 |
| 3 | $120 |
| 4 | $145 |
| 5 | $171 |
| 6 | $198 |
| 7 | $228 |
| 8 | $262 |
| 9 | $305 |
| 10 | $353 |

Faizah's Manufacturing Firm sells Good G in a perfectly competitive market with a downward-sloping demand curve and an upward-sloping supply curve. The market price is $32 per unit.

(a) Calculate the average fixed cost of producing 8 units. Show your work.

(b) Identify the profit-maximizing quantity. Explain using marginal analysis.

(c) Calculate the economic profit at the profit-maximizing quantity you identified in part (b). Show your work.

(d) Based on your answer to part (c), will the number of firms in the industry increase, decrease, or stay the same in the long run? Explain.

(e) Based on your answer to part (c), will the market price increase, decrease, or stay the same in the long run? Explain.

(f) The income elasticity of demand for Good G is $-3$, and the cross-price elasticity of demand for gizmos with respect to the price of Good G is 0.1. Based on your answer to part (e), what will happen to the demand for gizmos? Explain.

(g) Now assume that the market in which Faizah's Manufacturing Firm operates is in long-run equilibrium at a price of $35 per unit.
(i) Suppose the government imposes a price floor at $30 per unit on the market for Good G. Will consumer surplus in the market for Good G increase, decrease, or stay the same in the short run as a result of the price floor? Explain.
(ii) Suppose instead the cost of energy, a variable cost for Faizah's Manufacturing Firm, decreases. Will the profit-maximizing quantity of Good G for Faizah's Manufacturing Firm increase, decrease, or stay the same in the short run? Explain.

Respond to all parts of the question.

**Part A**

Select a point value to view scoring criteria, solutions, and/or examples and to score the response.

| 0 | 1 ✓ |
|---|---|

The response calculates the average fixed cost as $8 and shows the work.

$AFC = \frac{TFC}{Q} = \frac{\$64}{8} = \$8$

**Part B**

Select a point value to view scoring criteria, solutions, and/or examples and to score the response.

| 0 | 1 ✓ |
|---|---|

The response identifies the profit-maximizing quantity as 7 units and explains that the 7th unit is the last unit where the marginal revenue ( $32) is greater than the marginal cost ($30); the firm will not produce the 8th unit because the marginal cost of producing it ( $34) is greater than the marginal revenue earned ($32).

**Part C**

Select a point value to view scoring criteria, solutions, and/or examples and to score the response.

# Unit 2 Practice Questions - ALL

| 0 | 1 ✓ |
|---|---|

The response calculates the economic profit as $-\$4$ and shows the work.

$Economic\ Profit = TR - TC = 7\,(\$32) - \$228 = -\$4$

**Part D**

Select a point value to view scoring criteria, solutions, and/or examples and to score the response.

| 0 | 1 ✓ |
|---|---|

The response states that the number of firms in the industry will decrease and explains that negative economic profit will cause firms to exit the industry.

**Part E**

Select a point value to view scoring criteria, solutions, and/or examples and to score the response.

| 0 | 1 ✓ |
|---|---|

The response states that the market price will increase and explains that with the exit of firms, the market supply will decrease, causing the price to increase.

**Part F**

Select a point value to view scoring criteria, solutions, and/or examples and to score the response.

| 0 | 1 ✓ |
|---|---|

The response states that that demand for gizmos will increase and explains that the positive cross-price elasticity of demand for gizmos with respect to the price of Good G means that the goods are substitutes; therefore, an increase in the price of Good G will lead to an increase in the demand for gizmos.

**Part G**

Select a point value to view scoring criteria, solutions, and/or examples and to score the response.

| 0 | 1 | 2 ✓ |
|---|---|---|

The response does both of the following:

· States that consumer surplus will stay the same and explains that a price floor below equilibrium is not binding and will not affect the quantity exchanged in the market.

· States that the profit-maximizing quantity of Good G will increase and explains that a decrease in variable cost will shift the marginal cost curve downward at each quantity so that marginal cost will intersect marginal revenue at a higher quantity.

# Unit 2 Practice Questions - ALL

**188.** The cross-price elasticity of demand for flashlights and Good H is −2.5. This indicates which of the following?

(A) Flashlights and Good H are inferior goods.
(B) Flashlights and Good H are normal goods.
(C) Flashlights and Good H are substitutes in consumption.
(D) Flashlights and Good H are complements in consumption. ✓
(E) Flashlights and Good H both have elastic demand.

**Answer D**

Correct. Cross-price elasticity of demand is used to determine whether goods are substitutes, complements, or unrelated in consumption. When the cross-price elasticity coefficient is negative, the two goods are complements in consumption.

**189.** Following a decrease in the supply of oranges, the price of orange juice increased by 20 percent, which resulted in a 10 percent increase in the quantity of apple juice consumed. This implies that the cross elasticity of demand between orange juice and apple juice is

(A) 0
(B) 0.5 ✓
(C) 1
(D) 2
(E) indeterminate

# Unit 2 Practice Questions - ALL

**190.** ***Include correctly labeled diagrams, if useful or required, in explaining your answers. A correctly labeled diagram must have all axes and curves clearly labeled and must show directional changes. If the question prompts you to "Calculate," you must show how you arrived at your final answer.***

*The table below shows the total costs fa*ced by Hank's Clothing Emporium for different quantities of Good A sold.

| Quantity | Total Cost |
|---|---|
| 0 | $80 |
| 1 | $130 |
| 2 | $185 |
| 3 | $255 |
| 4 | $330 |
| 5 | $410 |
| 6 | $510 |
| 7 | $640 |
| 8 | $800 |
| 9 | $995 |
| 10 | $1,230 |

Hank's Clothing Emporium sells Good A in a perfectly competitive market with a downward-sloping demand curve and an upward-sloping supply curve. The market price is $60 per unit.

(a) Calculate the average fixed cost of producing 5 units. Show your work.

(b) Identify the profit-maximizing quantity. Explain using marginal analysis.

(c) Calculate the economic profit at the profit-maximizing quantity you identified in part (b). Show your work.

(d) Based on your answer to part (c), will the number of firms in the industry increase, decrease, or stay the same in the long run? Explain.

(e) Based on your answer to part (c), will the market price increase, decrease, or stay the same in the long run? Explain.

(f) The income elasticity of demand for Good A is $-2$ , and the cross-price elasticity of demand for khaki pants with respect to the price of Good A is 0.8. Based on your answer to part (e), what will happen to the demand for khaki pants? Explain.

(g) Now assume that the market in which Hank's Clothing Emporium operates is in long-run equilibrium.
(i) Suppose the rent paid by Hank's Clothing Emporium increases. Will Hank's Clothing Emporium's profit-maximizing quantity of Good A increase, decrease, or stay the same in the short run? Explain.
(ii) Instead suppose Hank's Clothing Emporium hires labor in a perfectly competitive market and the market wage decreases. Will Hank's Clothing Emporium's profit-maximizing quantity of Good A increase, decrease, or stay the same in the short run? Explain.

Respond to all parts of the question.

**Part A**

Select a point value to view scoring criteria, solutions, and/or examples and to score the response.

| 0 | 1 ✓ |
|---|---|

The response calculates the average fixed cost as $16 and shows the work.

$AFC = \frac{TFC}{Q} = \frac{\$80}{5} = \$16$

**Part B**

Select a point value to view scoring criteria, solutions, and/or examples and to score the response.

| 0 | 1 ✓ |
|---|---|

The response identifies the profit-maximizing quantity as 2 units and explains that the 2nd unit is the last unit where the marginal revenue ( $60) is greater than the marginal cost ($55); the firm will not produce the 3rd unit because the marginal cost of producing it ( $70) is greater than the marginal revenue earned ($60).

**Part C**

Select a point value to view scoring criteria, solutions, and/or examples and to score the response.

# Unit 2 Practice Questions - ALL

| 0 | 1 ✓ |
|---|---|

The response calculates the economic profit as $-\$65$ and shows the work.

Economic Profit $= TR - TC = 2(\$60) - \$185 = -\$65$

**Part D**

Select a point value to view scoring criteria, solutions, and/or examples and to score the response.

| 0 | 1 ✓ |
|---|---|

The response states that the number of firms in the industry will decrease and explains that negative economic profit will cause firms to exit the industry.

**Part E**

Select a point value to view scoring criteria, solutions, and/or examples and to score the response.

| 0 | 1 ✓ |
|---|---|

The response states that the market price will increase and explains that with the exit of firms, the market supply will decrease, causing the price to increase.

**Part F**

Select a point value to view scoring criteria, solutions, and/or examples and to score the response.

| 0 | 1 ✓ |
|---|---|

The response states that that the demand for khaki pants will increase and explains that the positive cross-price elasticity of demand for khaki pants with respect to the price of Good A means that the goods are substitutes; therefore, an increase in the price of Good A will lead to an increase in the demand for khaki pants.

**Part G**

Select a point value to view scoring criteria, solutions, and/or examples and to score the response.

| 0 | 1 | 2 ✓ |
|---|---|---|

The response does both of the following:

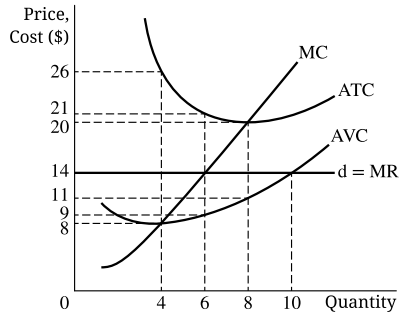
· States that the profit-maximizing quantity of Good A will stay the same in the short run and explains that a change in fixed cost does not affect the marginal cost.

· States that the profit-maximizing quantity of Good A will increase and explains that a decrease in the market wage will decrease the wage the firm pays its workers because the firm is a wage-taker in a perfectly competitive market; wages are a variable cost, so a decrease in the wage will shift the marginal cost curve downward at each quantity so that marginal cost will intersect marginal revenue at a higher quantity.

# Unit 2 Practice Questions - ALL

**191.** Include correctly labeled diagrams, if useful or required, in explaining your answers. A correctly labeled diagram must have all axes and curves clearly labeled and must show directional changes. If the question prompts you to "Calculate," you must show how you arrived at your final answer.

The graph provided shows the demand (d), marginal revenue (MR), average total cost (ATC), average variable cost (AVC), and marginal cost (MC) curves for Hansel Hangout, a typical profit-maximizing firm in a perfectly competitive market producing Good X.




(a) Calculate Hansel Hangout's total fixed cost. Show your work.

(b) Identify the price and Hansel Hangout's profit-maximizing quantity of Good X.

(c) Calculate Hansel Hangout's economic profit at the quantity identified in part (b). Show your work.

(d) As the market for Good X adjusts to the long-run equilibrium, what will happen to the price of Good X? Explain.

(e) Assume the cross-price elasticity of demand between Good X and Good C is positive. Given the change in the long-run price of Good X in part (d), will the quantity demanded of Good C increase, decrease, or remain the same? Explain.

Respond to all parts of the question.

**Part A**

Select a point value to view scoring criteria, solutions, and/or examples and to score the response.

The response must show appropriate work in order to receive the point.

| 0 | 1 ✓ |
|---|---|

The response accurately includes the criterion below

- ☐ Calculates the total fixed cost as $\$72$ and shows the work.
  $\text{Total Fixed Cost} = (\text{Average Total Cost} - \text{Average Variable Cost}) \times \text{Quantity}$
  $\text{Total Fixed Cost} = (\$26 - \$8) \times 4 = (\$18 \times 4) = \$72$
  OR
  $\text{Total Fixed Cost} = (\$21 - \$9) \times 6 = (\$12 \times 6) = \$72$

**Part B**

Select a point value to view scoring criteria, solutions, and/or examples and to score the response.

| 0 | 1 ✓ |
|---|---|

The response accurately includes the criterion below

- ☐ Identifies the price as $\$14$ and the profit-maximizing quantity as 6 units.

**Part C**

Select a point value to view scoring criteria, solutions, and/or examples and to score the response.

The response must show appropriate work in order to receive the point.

# Unit 2 Practice Questions - ALL

| 0 | 1 ✓ |
|---|---|

The response accurately includes the criterion below

- ☐ Calculates Hansel Hangout's economic profit at the profit-maximizing quantity as $-\$42$ and shows the work.
  $\text{Economic Profit} = (\text{Price} - \text{Average Total Cost}) \times \text{Quantity}$
  $= (\$14 - \$21) \times 6 \text{ units} = (-\$7 \times 6) = -\$42$
  OR
  $\text{Economic Profit} = \text{Total Revenue} - \text{Total Cost}$
  $= (\$14 \times 6) - (\$21 \times 6) = \$84 - \$126 = -\$42$

**Part D**

Select a point value to view scoring criteria, solutions, and/or examples and to score the response.

| 0 | 1 ✓ |
|---|---|

The response accurately includes the criterion below

- ☐ States that the market price of Good X will increase in the long run and explains that some firms will exit the market due to the negative economic profits, causing the market supply curve to shift to the left, increasing the market equilibrium price.

**Part E**

Select a point value to view scoring criteria, solutions, and/or examples and to score the response.

| 0 | 1 ✓ |
|---|---|

The response accurately includes the criterion below

- ☐ States that the quantity demanded of Good C will increase and explains that a positive cross-price elasticity of demand indicates that the two goods are substitutes in consumption and an increase in the price of Good X will increase the demand for Good C, causing an increase in the quantity demanded of Good C.

**192.** Cross-price elasticity of demand for honey with respect to yogurt is –4. At the current equilibrium, consumers are buying 100 containers of yogurt per week and 20 containers of honey per week. If the price of yogurt increases by 10 percent per container, what will be the new quantity demanded of honey?

(A) 4 containers
(B) 8 containers
(C) 10 containers
(D) 12 containers ✓
(E) 40 containers

**Answer D**

Correct. A negative cross-price elasticity of demand coefficient of $-4$ indicates that honey and yogurt are complements in consumption. Since the two goods are consumed together, an increase in the price of one good will cause a decrease in the demand, and therefore the quantity demanded, for the other good. In this case, cross-price elasticity of demand for honey with respect to yogurt is equal to the % change in quantity demanded of honey/ % change in the price of yogurt. Thus, a 10 percent increase in the price of yogurt resulted in a 40 percent decrease in the quantity demanded of honey, i.e. quantity demanded of honey will decrease by 8 containers, and therefore the new quantity demanded of honey will be 12 containers.

# Unit 2 Practice Questions - ALL

**193.** If the income elasticity of demand for good X is negative and the cross-price elasticity of demand between good X and good Y is negative, which of the following must be true of good X?

(A) X is a normal good and is a substitute for Y.
(B) X is a normal good and is a complement to Y.
(C) X is an inferior good and is a substitute for Y.
(D) X is an inferior good and is a complement to Y. ✓
(E) X is a normal good and Y is an inferior good.

**194.** Assume the income elasticity of demand for good Z equals $-5.0$. Which of the following is true?

(A) Good Z is a normal good.
(B) Good Z must have an inelastic demand.
(C) An increase in income will lead to a decrease in demand. ✓
(D) An increase in income will lead to an increase in demand.
(E) The income effect of a price increase will be a decrease in quantity demanded at every price.

**Answer C**

Correct. Income elasticity of demand measures the responsiveness of demand to changes in consumers' income. When the coefficient of the income elasticity of demand is negative, this indicates that Good Z is an inferior good—that is, the demand for Good Z decreases as consumers' income increases.

**195.** Which of the following statements relating to income elasticity is true?

(A) A positive value for the income elasticity coefficient indicates an inferior good.
(B) If good X and good Y have negative income elasticities, then both goods are substitutes.
(C) With an income elasticity coefficient of 0.6, the demand is inelastic and the good is an inferior good.
(D) With an income elasticity coefficient of 5, a 10 percent increase in income will lead to a 50 percent increase in the quantity demanded of the good. ✓
(E) With an income elasticity coefficient of $-1.2$, a 10 percent increase in income will lead to a 12 percent decrease in the price of the good.

**Answer D**

Correct. Income elasticity of demand measures the responsiveness of demand to changes in consumers' income and is calculated as the ratio of the percentage change in quantity demanded to the percentage change in income. When the magnitude of the income elasticity is 5, a 10 percent increase in income will lead to a 50 percent increase in quantity demanded of the good.

**196.** If the income elasticity of demand for Good X is negative, how will an increase in consumers' income affect the market for Good X?

(A) The demand curve will shift to the left, the equilibrium price will increase, and the equilibrium quantity will decrease.
(B) The demand curve will shift to the left, and both the equilibrium price and quantity will decrease. ✓
(C) The demand curve will shift to the right, and both the equilibrium price and quantity will increase.
(D) The supply curve will shift to the right, the equilibrium price will decrease, and the equilibrium quantity will increase.
(E) The supply curve will shift to the left, the equilibrium price will increase, and the equilibrium quantity will decrease.

**Answer B**

Correct. When the income elasticity of demand is negative for a good, that good is inferior. For inferior goods, such as Good X, an increase in consumers' incomes causes a leftward shift of the demand curve for that good, resulting in a decrease in both the equilibrium price and quantity.

# Unit 2 Practice Questions - ALL

**197.** A 10 percent increase in Sandra's income causes Sandra's consumption of milk to decrease from 10 cartons to 6 cartons. Sandra's income elasticity of demand for milk is

(A) greater than zero and therefore milk is a necessity
(B) greater than zero and therefore milk is a normal good
(C) less than zero and therefore milk is a normal good
(D) less than zero and therefore milk is an inferior good ✓
(E) greater than one and therefore milk is a necessity

**Answer D**

Correct. Sandra's income elasticity of demand for milk is $\frac{\left[\left(\frac{10-6}{10}\right)\times 100\right]}{10\%} = \frac{-40\%}{10\%} = -4$ which is less than zero. A negative income elasticity of demand indicates that milk is an inferior good.

# Unit 2 Practice Questions - ALL

**198. Include correctly labeled diagrams, if useful or required, in explaining your answers. A correctly labeled diagram must have all axes and curves clearly labeled and must show directional changes. If the question prompts you to "Calculate," you must show how you arrived at your final answer.**

The table below shows the total variable costs faced by Julia's Accessories Store for different quantities of Good E sold.

| Quantity | Total Variable Cost |
|---|---|
| 1 | $35 |
| 2 | $73 |
| 3 | $113 |
| 4 | $154 |
| 5 | $198 |
| 6 | $248 |
| 7 | $303 |
| 8 | $360 |
| 9 | $421 |
| 10 | $498 |

Julia's Accessories Store sells Good E in a perfectly competitive market with a downward-sloping demand curve and an upward-sloping supply curve. The market price is $62 per unit, and the total fixed cost is $152.

(a) Identify the profit-maximizing quantity. Explain using marginal analysis.

(b) Calculate the economic profit at the profit-maximizing quantity you identified in part (a). Show your work.

(c) Calculate the average fixed cost of producing 8 units. Show your work.

(d) Based on your answer to part (b), will the number of firms in the industry increase, decrease, or stay the same in the long run? Explain.

(e) Based on your answer to part (b), will the market price increase, decrease, or stay the same in the long run? Explain.

(f) The income elasticity of demand for Good E is $-1.2$, and the cross-price elasticity of demand for bracelets with respect to the price of Good E is $0.6$. Based on your answer to part (e), what will happen to the demand for bracelets? Explain.

(g) Now assume that the market in which Julia's Accessories Store operates is in long-run equilibrium.
(i) Suppose the market demand for Good E decreases. Will the profit-maximizing quantity of Good E for Julia's Accessories Store increase, decrease, or stay the same in the short run? Explain.
(ii) Suppose instead the wages that Julia's Accessories Store pays its workers increase. Will the profit-maximizing quantity of Good E for Julia's Accessories Store increase, decrease, or stay the same in the short run? Explain.

Respond to all parts of the question.

**Part A**

Select a point value to view scoring criteria, solutions, and/or examples and to score the response.

| 0 | 1 ✓ |
|---|---|

The response identifies the profit-maximizing quantity as 9 units and explains that the $9^{th}$ unit is the last unit where the marginal revenue ( $62) is greater than the marginal cost ($61); the firm will not produce the $10^{th}$ unit because the marginal cost of producing it ( $77) is greater than the marginal revenue earned ($62).

**Part B**

Select a point value to view scoring criteria, solutions, and/or examples and to score the response.

| 0 | 1 ✓ |
|---|---|

The response calculates the economic profit as $-\$15$ and shows the work.

$Economic\ Profit = TR - TC = 9\,(\$62) - (\$421 + \$152) = -\$15$

**Part C**

Select a point value to view scoring criteria, solutions, and/or examples and to score the response.

| 0 | 1 ✓ |
|---|---|

# Unit 2 Practice Questions - ALL

The response calculates the average fixed cost as $19 and shows the work.

$AFC = \frac{TFC}{Q} = \frac{\$152}{8} = \$19$

**Part D**

Select a point value to view scoring criteria, solutions, and/or examples and to score the response.

| 0 | 1 ✓ |
|---|---|

The response states that the number of firms in the industry will decrease and explains that negative economic profit will cause firms to exit the industry.

**Part E**

Select a point value to view scoring criteria, solutions, and/or examples and to score the response.

| 0 | 1 ✓ |
|---|---|

The response states that the market price will increase and explains that with the exit of firms, the market supply will decrease, causing the price to increase.

**Part F**

Select a point value to view scoring criteria, solutions, and/or examples and to score the response.

| 0 | 1 ✓ |
|---|---|

The response states that that the demand for bracelets will increase and explains that the positive cross-price elasticity of demand for bracelets with respect to the price of Good E means that the goods are substitutes; therefore, an increase in the price of Good E will lead to an increase in the demand for bracelets.

**Part G**

Select a point value to view scoring criteria, solutions, and/or examples and to score the response.

| 0 | 1 | 2 ✓ |
|---|---|---|

The response does both of the following:

· States that the profit-maximizing quantity of Good E will decrease and explains that the decrease in market demand will decrease the market price (the firm's marginal revenue), which will shift the marginal revenue curve downward at each quantity so that marginal cost will intersect marginal revenue at a lower quantity.

· States that the profit-maximizing quantity of Good E will decrease and explain that wages are a variable cost, so an increase in wages will shift the marginal cost curve upward at each quantity so that marginal cost will intersect marginal revenue at a lower quantity.

# Unit 2 Practice Questions - ALL

**199. Include correctly labeled diagrams, if useful or required, in explaining your answers. A correctly labeled diagram must have all axes and curves clearly labeled and must show directional changes. If the question prompts you to "Calculate," you must show how you arrived at your final answer.**

The table below shows the total costs faced by Kailas's Wholesale Market for different quantities of Good Z sold.

| Quantity | Total Cost |
|---|---|
| 0 | $30 |
| 1 | $55 |
| 2 | $95 |
| 3 | $140 |
| 4 | $200 |
| 5 | $280 |
| 6 | $380 |
| 7 | $500 |
| 8 | $640 |
| 9 | $800 |
| 10 | $980 |

Kailas's Wholesale Market sells Good Z in a perfectly competitive market with a downward-sloping demand curve and an upward-sloping supply curve. The market price is $90 per unit.

(a) Calculate the average fixed cost of producing 3 units. Show your work.

(b) Identify the profit-maximizing quantity. Explain using marginal analysis.

(c) Calculate the economic profit at the profit-maximizing quantity you identified in part (b). Show your work.

(d) Based on your answer to part (c), will the number of firms in the industry increase, decrease, or stay the same in the long run? Explain.

(e) Based on your answer to part (c), will the market price increase, decrease, or stay the same in the long run? Explain.

(f) The income elasticity of demand for Good Z is 2, and the cross-price elasticity of demand for chairs with respect to the price of Good Z is 0.4. Based on your answer to part (e), what will happen to the demand for chairs? Explain.

(g) Now assume that the market in which Kailas's Wholesale Market operates is in long-run equilibrium.
(i) Suppose the rent paid by Kailas's Wholesale Market decreases. Will Kailas's Wholesale Market's profit-maximizing quantity of Good Z increase, decrease, or stay the same in the short run? Explain.
(ii) Instead suppose Kailas's Wholesale Market hires labor in a perfectly competitive market and the market wage increases. Will Kailas's Wholesale Market's profit-maximizing quantity of Good Z increase, decrease, or stay the same in the short run? Explain.

Respond to all parts of the question.

**Part A**

Select a point value to view scoring criteria, solutions, and/or examples and to score the response.

| 0 | 1 ✓ |
|---|---|

The response calculates the average fixed cost as $10 and shows the work.

$AFC = \frac{TFC}{Q} = \frac{\$30}{3} = \$10$

**Part B**

Select a point value to view scoring criteria, solutions, and/or examples and to score the response.

| 0 | 1 ✓ |
|---|---|

The response identifies the profit-maximizing quantity as 5 units and explains that the $5^{th}$ unit is the last unit where the marginal revenue ( $90) is greater than the marginal cost ($80); the firm will not produce the $6^{th}$ unit because the marginal cost of producing it ( $100) is greater than the marginal revenue earned ($90).

**Part C**

Select a point value to view scoring criteria, solutions, and/or examples and to score the response.

# Unit 2 Practice Questions - ALL

| 0 | 1 ✓ |
|---|---|

The response calculates the economic profit as $170 and shows the work.

$Economic\,Profit = TR - TC = 5(\$90) - \$280 = \$170$

**Part D**

Select a point value to view scoring criteria, solutions, and/or examples and to score the response.

| 0 | 1 ✓ |
|---|---|

The response states that the number of firms in the industry will increase and explains that positive economic profit will attract new firms to enter the industry.

**Part E**

Select a point value to view scoring criteria, solutions, and/or examples and to score the response.

| 0 | 1 ✓ |
|---|---|

The response states that the market price will decrease and explains that with the entry of firms, the market supply will increase, causing the price to decrease.

**Part F**

Select a point value to view scoring criteria, solutions, and/or examples and to score the response.

| 0 | 1 ✓ |
|---|---|

The response states that that the demand for chairs will decrease and explains that the positive cross-price elasticity of demand for chairs with respect to the price of Good Z means that the goods are substitutes; therefore, a decrease in the price of Good Z will lead to a decrease in the demand for chairs.

**Part G**

Select a point value to view scoring criteria, solutions, and/or examples and to score the response.

| 0 | 1 | 2 ✓ |
|---|---|---|

The response does both of the following:

· States that the profit-maximizing quantity of Good Z will stay the same in the short run and explains that a change in fixed cost does not affect the marginal cost.

· States that the profit-maximizing quantity of Good Z will decrease and explains that an increase in the market wage will increase the wage the firm pays its workers because the firm is a wage-taker in a perfectly competitive market; wages are a variable cost, so an increase in the wage will shift the marginal cost curve upward at each quantity so that marginal cost will intersect marginal revenue at a lower quantity.

# Unit 2 Practice Questions - ALL

**200. Include correctly labeled diagrams, if useful or required, in explaining your answers. A correctly labeled diagram must have all axes and curves clearly labeled and must show directional changes. If the question prompts you to "Calculate," you must show how you arrived at your final answer.**

The table below shows the total variable costs faced by Karen's Kaleidoscope Store for different quantities of Good N sold.

| Quantity | Total Variable Cost |
|---|---|
| 1 | $30 |
| 2 | $70 |
| 3 | $120 |
| 4 | $180 |
| 5 | $250 |
| 6 | $340 |
| 7 | $435 |
| 8 | $535 |
| 9 | $645 |
| 10 | $760 |

Karen's Kaleidoscope Store sells Good N in a perfectly competitive market with a downward-sloping demand curve and an upward-sloping supply curve. The market price is $80 per unit, and the total fixed cost is $300.

(a) Identify the profit-maximizing quantity. Explain using marginal analysis.

(b) Calculate the economic profit at the profit-maximizing quantity you identified in part (a). Show your work.

(c) Calculate the average fixed cost of producing 3 units. Show your work.

(d) Based on your answer to part (b), will the number of firms in the industry increase, decrease, or stay the same in the long run? Explain.

(e) Based on your answer to part (b), will the market price increase, decrease, or stay the same in the long run? Explain.

(f) The income elasticity of demand for Good N is $-1.8$, and the cross-price elasticity of demand for kaleidoscopes with respect to the price of Good N is $-0.5$ .Based on your answer to part (e), what will happen to the demand for kaleidoscopes? Explain.

(g) Now assume that the market in which Karen's Kaleidoscope Store operates is in long-run equilibrium at a price of $85 per unit.
(i) Suppose annual property taxes for Karen's Kaleidoscope Store decrease by $2,500. Will the profit-maximizing quantity of Good N for Karen's Kaleidoscope Store increase, decrease, or stay the same in the short run? Explain.
(ii) Instead suppose the government imposes a price floor at $75 on the market for Good N. Will deadweight loss in the market for Good N increase, decrease, or stay the same in the short run as a result of the price floor? Explain.

Respond to all parts of the question.

**Part A**

Select a point value to view scoring criteria, solutions, and/or examples and to score the response.

| 0 | 1 ✓ |
|---|---|

The response identifies the profit-maximizing quantity as 5 units and explains that the 5th unit is the last unit where the marginal revenue ( $80) is greater than the marginal cost ($70); the firm will not produce the 6th unit because the marginal cost of producing it ( $90) is greater than the marginal revenue earned ($80).

**Part B**

Select a point value to view scoring criteria, solutions, and/or examples and to score the response.

| 0 | 1 ✓ |
|---|---|

The response calculates the economic profit as $-$150 and shows the work.

$Economic\ Profit = TR - TC = 5\,(\$80) - (\$250 + \$300) = -\$150$

**Part C**

Select a point value to view scoring criteria, solutions, and/or examples and to score the response.

| 0 | 1 ✓ |
|---|---|

# Unit 2 Practice Questions - ALL

The response calculates the average fixed cost as $100 and shows the work.

$AFC = \frac{TFC}{Q} = \frac{\$300}{3} = \$100$

**Part D**

Select a point value to view scoring criteria, solutions, and/or examples and to score the response.

| 0 | 1 ✓ |
|---|---|

The response states that the number of firms in the industry will decrease and explains that negative economic profit will cause firms to exit the industry.

**Part E**

Select a point value to view scoring criteria, solutions, and/or examples and to score the response.

| 0 | 1 ✓ |
|---|---|

The response states that the market price will increase and explains that with the exit of firms, the market supply will decrease, causing the price to increase.

**Part F**

Select a point value to view scoring criteria, solutions, and/or examples and to score the response.

| 0 | 1 ✓ |
|---|---|

The response states that that the demand for kaleidoscopes will decrease and explains that the negative cross-price elasticity of demand for kaleidoscopes with respect to the price of Good N means that the goods are complements; therefore, an increase in the price of Good N will lead to a decrease in the demand for kaleidoscopes.

**Part G**

Select a point value to view scoring criteria, solutions, and/or examples and to score the response.

| 0 | 1 | 2 ✓ |
|---|---|---|

The response does both of the following:

· States that the profit-maximizing quantity of Good N will stay the same in the short run and explain that property taxes are a fixed cost and a change in fixed cost does not affect the marginal cost.

· States that the deadweight loss will stay the same and explain that a price floor below equilibrium is not binding and will not affect the quantity exchanged in the market.

# Unit 2 Practice Questions - ALL

**201.** Kerri goes shopping for volleyballs. The table below shows the dollar value of the total benefit she receives from buying various quantities of volleyballs.

| Volleyballs | Total Benefit |
|---|---|
| 0 | $0 |
| 1 | $50 |
| 2 | $95 |
| 3 | $125 |
| 4 | $146 |
| 5 | $156 |
| 6 | $160 |
| 7 | $161 |

a. Calculate the marginal benefit Kerri receives from buying the third volleyball.

b. Assume the price of each volleyball is $9.

i. Calculate Kerri's total consumer surplus if she buys two volleyballs. Show your work.

ii. How many volleyballs should Kerri buy to maximize her total consumer surplus from volleyballs? Explain using marginal analysis.

c. Assume that the market for volleyballs is perfectly competitive and that soccer balls are a substitute for volleyballs.

i. Draw a correctly labeled graph of the market for volleyballs, and label the equilibrium price as $P_1$ and the equilibrium quantity as $Q_1$.

ii. If the price of soccer balls decreases, show the effect on the equilibrium price and quantity of volleyballs on your graph in part c(i).

d. Assume instead that a 10 percent increase in income causes the demand for volleyballs to fall by 5 percent.

i. Calculate the income elasticity of demand for volleyballs.

ii. Does the value of the income elasticity indicate that volleyballs are a normal good or an inferior good? Explain.

Respond to all parts of the question.

**Part A**

One point is earned for stating that the marginal benefit of the 3rd volleyball is $30.

| 0 | 1 ✓ |
|---|---|

The student earns all of the following points:

One point is earned for stating that the marginal benefit of the 3rd volleyball is $30.

**Part B**

**2 Points**

- One point is earned for the correct calculation of the total consumer surplus and showing the work. CS = (95 - 18) = 77$ORCS = (50 - 9 + 45 - 9) = 77$
- One point is earned for stating that Kerri should buy 5 volleyballs to maximize her total consumer surplus, and for explaining that the marginal benefit from purchasing the fifth ball is 10$which is greater than the price$,9. The marginal benefit from the 6th ball is less than the price.

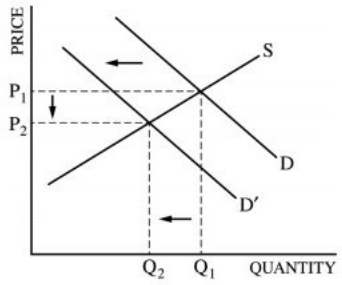
| 0 | 1 | 2 ✓ |
|---|---|---|

The student earns all of the following points:

- One point is earned for the correct calculation of the total consumer surplus and showing the work. CS = (95 - 18) = 77$ORCS = (50 - 9 + 45 - 9) = 77$
- One point is earned for stating that Kerri should buy 5 volleyballs to maximize her total consumer surplus, and for explaining that the marginal benefit from purchasing the fifth ball is 10$which is greater than the price$,9. The marginal benefit from the 6th ball is less than the price.

# Unit 2 Practice Questions - ALL

**Part C**

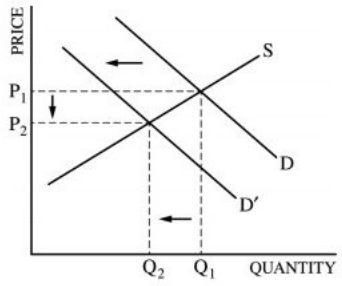



**2 Points**

- One point is earned for drawing a correctly labeled graph for the volleyball market.
- One point is earned for showing a leftward shift of the demand curve for volleyballs, resulting in a lower equilibrium price and quantity.

| 0 | 1 | 2 ✓ |
|---|---|---|

The student earns all of the following points:




- One point is earned for drawing a correctly labeled graph for the volleyball market.
- One point is earned for showing a leftward shift of the demand curve for volleyballs, resulting in a lower equilibrium price and quantity.

**Part D**

- One point is earned for correctly calculating the income elasticity of demand for volleyballs: IE = (-5/10) = -1/2, and
- One point is earned for stating that volleyballs are inferior goods because the income elasticity is negative indicating that an increase in income decreases the demand for volleyballs.

| 0 | 1 | 2 ✓ |
|---|---|---|

The student earns all of the following points:

- One point is earned for correctly calculating the income elasticity of demand for volleyballs: IE = (-5/10) = -1/2, and
- One point is earned for stating that volleyballs are inferior goods because the income elasticity is negative indicating that an increase in income decreases the demand for volleyballs.

# Unit 2 Practice Questions - ALL

**202. Include correctly labeled diagrams, if useful or required, in explaining your answers. A correctly labeled diagram must have all axes and curves clearly labeled and must show directional changes. If the question prompts you to "Calculate," you must show how you arrived at your final answer.**

The table below shows the total costs faced by Kiyoshi's Clothing Store for different quantities of Good F sold.

| Quantity | Total Cost |
|---|---|
| 0 | $8 |
| 1 | $18 |
| 2 | $32 |
| 3 | $48 |
| 4 | $72 |
| 5 | $104 |
| 6 | $144 |
| 7 | $192 |
| 8 | $248 |
| 9 | $312 |
| 10 | $384 |

Kiyoshi's Clothing Store sells Good F in a perfectly competitive market with a downward-sloping demand curve and an upward-sloping supply curve. The market price is $60 per unit.

(a) Calculate the average fixed cost of producing 4 units. Show your work.

(b) Identify the profit-maximizing quantity. Explain using marginal analysis.

(c) Calculate the economic profit at the profit-maximizing quantity you identified in part (b). Show your work.

(d) Based on your answer to part (c), will the number of firms in the industry increase, decrease, or stay the same in the long run? Explain.

(e) Based on your answer to part (c), will the market price increase, decrease, or stay the same in the long run? Explain.

(f) The income elasticity of demand for Good F is 3, and the cross-price elasticity of demand for gloves with respect to the price of Good F is 0.5. Based on your answer to part (e), what will happen to the demand for gloves? Explain.

(g) Now assume that the market in which Kiyoshi's Clothing Store operates is in long-run equilibrium at a price of $50 per unit.
(i) Suppose the government imposes a price floor at $55 per unit on the market for Good F. Will consumer surplus in the market for Good F increase, decrease, or stay the same in the short run as a result of the price floor? Explain.
(ii) Suppose instead the cost of energy, a variable cost for Kiyoshi's Clothing Store, increases. Will the profit-maximizing quantity of Good F for Kiyoshi's Clothing Store increase, decrease, or stay the same in the short run? Explain.

Respond to all parts of the question.

**Part A**

Select a point value to view scoring criteria, solutions, and/or examples and to score the response.

| 0 | 1 ✓ |
|---|---|

The response calculates the average fixed cost as $2 and shows the work.

$AFC = \frac{TFC}{Q} = \frac{\$8}{4} = \$2$

**Part B**

Select a point value to view scoring criteria, solutions, and/or examples and to score the response.

| 0 | 1 ✓ |
|---|---|

The response identifies the profit-maximizing quantity as 8 units and explains that the 8th unit is the last unit where the marginal revenue ( $60) is greater than the marginal cost ($56); the firm will not produce the 9th unit because the marginal cost of producing it ( $64) is greater than the marginal revenue earned ($60).

**Part C**

Select a point value to view scoring criteria, solutions, and/or examples and to score the response.

# Unit 2 Practice Questions - ALL

| 0 | 1 ✓ |
|---|---|

The response calculates the economic profit as $232 and shows the work.

$Economic\ Profit = TR - TC = 8\,(\$60) - \$248 = \$232$

**Part D**

Select a point value to view scoring criteria, solutions, and/or examples and to score the response.

| 0 | 1 ✓ |
|---|---|

The response states that the number of firms in the industry will increase and explains that positive economic profit will attract new firms to enter the industry.

**Part E**

Select a point value to view scoring criteria, solutions, and/or examples and to score the response.

| 0 | 1 ✓ |
|---|---|

The response states that the market price will decrease and explains that with the entry of firms, the market supply will increase, causing the price to decrease.

**Part F**

Select a point value to view scoring criteria, solutions, and/or examples and to score the response.

| 0 | 1 ✓ |
|---|---|

The response states that that the demand for gloves will decrease and explains that the positive cross-price elasticity of demand for gloves with respect to the price of Good F means that the goods are substitutes; therefore, a decrease in the price of Good F will lead to a decrease in the demand for gloves.

**Part G**

Select a point value to view scoring criteria, solutions, and/or examples and to score the response.

| 0 | 1 | 2 ✓ |
|---|---|---|

The response does both of the following:

· States that consumer surplus will decrease and explains that a price floor above the equilibrium price is binding and the quantity exchanged in the market will be limited by the quantity demanded, which is less than the equilibrium quantity, thus decreasing consumer surplus.

· States that the profit-maximizing quantity of Good F will decrease and explains that an increase in variable cost will shift the marginal cost curve upward at each quantity so that marginal cost will intersect marginal revenue at a lower quantity.

# Unit 2 Practice Questions - ALL

**203. Include correctly labeled diagrams, if useful or required, in explaining your answers. A correctly labeled diagram must have all axes and curves clearly labeled and must show directional changes. If the question prompts you to "Calculate," you must show how you arrived at your final answer.**

The table below shows the total costs faced by Lynda's Office Supply Store for different quantities of Good P sold.

| Quantity | Total Cost |
|---|---|
| 0 | $12 |
| 1 | $22 |
| 2 | $52 |
| 3 | $102 |
| 4 | $172 |
| 5 | $252 |
| 6 | $342 |
| 7 | $442 |
| 8 | $552 |
| 9 | $672 |
| 10 | $802 |

Lynda's Office Supply Store sells Good P in a perfectly competitive market with a downward-sloping demand curve and an upward-sloping supply curve. The market price is $45 per unit.

(a) Calculate the average fixed cost of producing 4 units. Show your work.

(b) Identify the profit-maximizing quantity. Explain using marginal analysis.

(c) Calculate the economic profit at the profit-maximizing quantity you identified in part (b). Show your work.

(d) Based on your answer to part (c), will the number of firms in the industry increase, decrease, or stay the same in the long run? Explain.

(e) Based on your answer to part (c), will the market price increase, decrease, or stay the same in the long run? Explain.

(f) The income elasticity of demand for Good P is 1.8, and the cross-price elasticity of demand for chair mats with respect to the price of Good P is 0.9. Based on your answer to part (e), what will happen to the demand for chair mats? Explain.

(g) Now assume that the market in which Lynda's Office Supply Store operates is in long-run equilibrium at a price of $40 per unit.
(i) Suppose shipping costs per order for Lynda's Office Supply Store increase. Will the profit-maximizing quantity of Good P for Lynda's Office Supply Store increase, decrease, or stay the same in the short run? Explain.
(ii) Instead suppose the government imposes a price ceiling of $50 on the market for Good P. Will total economic surplus in the market for Good P increase, decrease, or stay the same in the short run as a result of the price ceiling? Explain.

Respond to all parts of the question.

**Part A**

Select a point value to view scoring criteria, solutions, and/or examples and to score the response.

| 0 | 1 ✓ |
|---|---|

The response calculates the average fixed cost as $3 and shows the work.

$AFC = \frac{TFC}{Q} = \frac{\$12}{4} = \$3$

**Part B**

Select a point value to view scoring criteria, solutions, and/or examples and to score the response.

| 0 | 1 ✓ |
|---|---|

The response identifies the profit-maximizing quantity as 2 units and explains that the 2nd unit is the last unit where the marginal revenue ( $45) is greater than the marginal cost ($30); the firm will not produce the 3rd unit because the marginal cost of producing it ( $50) is greater than the marginal revenue earned ($45).

**Part C**

Select a point value to view scoring criteria, solutions, and/or examples and to score the response.

# Unit 2 Practice Questions - ALL

| 0 | 1 ✓ |
|---|---|

The response calculates the economic profit as $38 and shows the work.

$Economic\ Profit = TR - TC = 2\,(\$45) - \$52 = \$38$

**Part D**

Select a point value to view scoring criteria, solutions, and/or examples and to score the response.

| 0 | 1 ✓ |
|---|---|

The response states that the number of firms in the industry will increase and explains that positive economic profit will attract new firms to enter the industry.

**Part E**

Select a point value to view scoring criteria, solutions, and/or examples and to score the response.

| 0 | 1 ✓ |
|---|---|

The response states that the market price will decrease and explains that with the entry of firms, the market supply will increase, causing the price to decrease.

**Part F**

Select a point value to view scoring criteria, solutions, and/or examples and to score the response.

| 0 | 1 ✓ |
|---|---|

The response states that that the demand for chair mats will decrease and explains that that the positive cross-price elasticity of demand for chair mats with respect to the price of Good P means that the goods are substitutes; therefore, a decrease in the price of Good P will lead to a decrease in the demand for chair mats.

**Part G**

Select a point value to view scoring criteria, solutions, and/or examples and to score the response.

| 0 | 1 | 2 ✓ |
|---|---|---|

The response does both of the following:

· States that the profit-maximizing quantity of Good P will decrease and explains that shipping costs per order are a variable cost, so an increase in shipping costs per order will shift the marginal cost curve upward at each quantity so that marginal cost will intersect marginal revenue at a lower quantity.

· States that total economic surplus will stay the same and explains that a price ceiling above the equilibrium price is not binding and will not affect the quantity exchanged in the market.

# Unit 2 Practice Questions - ALL

**204. Include correctly labeled diagrams, if useful or required, in explaining your answers. A correctly labeled diagram must have all axes and curves clearly labeled and must show directional changes. If the question prompts you to "Calculate," you must show how you arrived at your final answer.**

The table below shows the total benefit, in dollars, that Maria derives from consuming two goods, bandanas and Good G.

| Quantity of Bandanas | Total Benefit of Bandanas | Quantity of Good G | Total Benefit of Good G |
|---|---|---|---|
| 0 | $0 | 0 | $0 |
| 1 | $10 | 1 | $38 |
| 2 | $17 | 2 | $70 |
| 3 | $21 | 3 | $96 |
| 4 | $24 | 4 | $116 |
| 5 | $26 | 5 | *$130* |
| *6* | *$26* | *6* | *$138* |

Maria has a limited weekly income of $9, and she spends it all on bandanas and Good G. Assume the price of each bandana is $1 and the price of Good G is $2 per unit.

(a) Calculate Maria's consumer surplus from the fifth unit of Good G. Show your work.

(b) Identify the quantity of bandanas and the quantity of Good G that will maximize Maria's total benefit given her weekly income. Explain using marginal analysis.

(c) If Maria's weekly income increases from $9 to 12, would Maria be able to buy 3 bandanas and 4 units of Good G? Explain using numbers.

(d) Suppose the price of Good G decreases by 5% and Maria buys 2% more of Good G and 4% more of Good R. Based on this change, identify whether Good G and Good R are substitutes, complements, or not related. Explain using numbers.

(e) Suppose instead that bandanas are produced in a perfectly competitive market and the price of the fabric used to make bandanas decreases. If bandanas are a normal good, will the quantity of bandanas that will maximize Maria's total benefit increase, decrease, or stay the same? Explain.

Respond to all parts of the question.

**Part A**

Select a point value to view scoring criteria, solutions, and/or examples and to score the response.

| 0 | 1 ✓ |
|---|---|

The response calculates consumer surplus as $12 and shows the work.

$\text{Consumer Surplus} = \text{Marginal Benefit} - \text{Price} = \ \$14 - \$2 = \$12$

**Part B**

Select a point value to view scoring criteria, solutions, and/or examples and to score the response.

| 0 | 1 ✓ |
|---|---|

The response identifies that that 1 bandana and 4 units of Good G will maximize Maria's total benefit given her weekly income of $9 and explains that for the last unit of each good consumed the ratio of the marginal benefit to the price of Good G (10) is equal to the ratio of the marginal benefit to the price of bandanas (10), or

$$\frac{MB_{Bandana}}{Price_{Bandana}} = \frac{MB_{Good\ G}}{Price_{Good\ G}}$$

$$\frac{\$10}{\$1} = \frac{\$20}{\$2}$$

$$10 = 10$$

**Part C**

Select a point value to view scoring criteria, solutions, and/or examples and to score the response.

| 0 | 1 ✓ |
|---|---|

# Unit 2 Practice Questions - ALL

The response states that yes, Maria would be able to buy 3 bandanas and 4 units of Good G and explains that her total expenditures would be $\$11 (= \$3 \times 1 + \$2 \times 4)$, which is less than her weekly income of $12.

**Part D**

Select a point value to view scoring criteria, solutions, and/or examples and to score the response.

| 0 | 1 ✓ |
|---|---|

The response identifies Good G and Good R as complements and explains that the cross-price elasticity of demand is negative because a 5% decrease in the price of Good G led to a 4% increase in the demand for Good R.

**Part E**

Select a point value to view scoring criteria, solutions, and/or examples and to score the response.

| 0 | 1 ✓ |
|---|---|

The response states that the quantity of bandanas that will maximize Maria's total benefit will increase and explains that a decrease in the price of an input to production will increase the supply of bandanas, which will decrease the price of bandanas and increase the marginal benefit per dollar spent for each additional unit consumed.

# Unit 2 Practice Questions - ALL

**205. Include correctly labeled diagrams, if useful or required, in explaining your answers. A correctly labeled diagram must have all axes and curves clearly labeled and must show directional changes. If the question prompts you to "Calculate," you must show how you arrived at your final answer.**

The table below shows the total benefit, in dollars, that Polina derives from consuming two goods, sandwiches and Good E.

| Quantity of Sandwiches | Total Benefit of Sandwiches | Quantity of Good E | Total Benefit of Good E |
|---|---|---|---|
| 0 | $0 | 0 | $0 |
| 1 | $120 | 1 | $120 |
| 2 | $210 | 2 | $180 |
| 3 | $270 | 3 | $210 |
| 4 | $300 | 4 | $222 |
| 5 | $310 | 5 | $225 |
| 6 | $315 | 6 | $225 |

Polina has a limited weekly income of $24, and she spends it all on sandwiches and Good E. Assume the price of each sandwich is 3 and the price of Good E is $6 per unit.

(a) Calculate Polina's consumer surplus from the third unit of Good E. Show your work.

(b) Identify the quantity of Good E and the quantity of sandwiches that will maximize Polina's total benefit given her weekly income. Explain using marginal analysis.

(c) If Polina's weekly income increases from $24 to 28, will Polina be able to buy 4 sandwiches and 3 units of Good E? Explain using numbers.

(d) Suppose the price of Good E increases by 8% and Polina buys 2% less of Good E and 4% more of Good Y. Based on this change, identify whether Good E and Good Y are substitutes, complements, or not related. Explain using numbers.

(e) Suppose instead that sandwiches are produced in a perfectly competitive market and the price of bread, an input to the production of sandwiches, decreases. If sandwiches are a normal good, will the quantity of sandwiches that will maximize Polina's total benefit increase, decrease, or stay the same? Explain.

Respond to all parts of the question.

**Part A**

Select a point value to view scoring criteria, solutions, and/or examples and to score the response.

| 0 | 1 ✓ |
|---|---|

The response calculates consumer surplus as $24 and shows the work.

$\text{Consumer Surplus} = \text{Marginal Benefit} - \text{Price} = \$30 - 6 = \$24$

**Part B**

Select a point value to view scoring criteria, solutions, and/or examples and to score the response.

| 0 | 1 ✓ |
|---|---|

The response identifies that 4 sandwiches and 2 units of Good E will maximize Polina's total benefit given her weekly income of $24 and explains that for the last unit of each good consumed the ratio of the marginal benefit to the price of Good E (10) is equal to the ratio of the marginal benefit to the price of sandwiches (10), or

$$\frac{MB_{Good\ E}}{Price_{Good\ E}} = \frac{MB_{Sandwich}}{Price_{Sandwich}}$$

$$\frac{\$30}{\$3} = \frac{\$60}{\$6}$$

$10 = 10$

**Part C**

Select a point value to view scoring criteria, solutions, and/or examples and to score the response.

| 0 | 1 ✓ |
|---|---|

# Unit 2 Practice Questions - ALL

The response states that no, Polina would not be able to buy 4 sandwiches and 3 units of Good E and explains that her total expenditures would be \$30 $(= \$3 \times 4 + \$6 \times 3)$, which is greater than her weekly income of \$28.

**Part D**

Select a point value to view scoring criteria, solutions, and/or examples and to score the response.

| 0 | 1 ✓ |
|---|---|

The response identifies that Good E and Good Y are substitutes and explains that the cross-price elasticity of demand is positive because an 8% increase in the price of Good E led to a 4% increase in the demand for Good Y.

**Part E**

Select a point value to view scoring criteria, solutions, and/or examples and to score the response.

| 0 | 1 ✓ |
|---|---|

The response states that the quantity of sandwiches that will maximize Polina's total benefit will increase and explains that a decrease in the price of an input to the production of sandwiches would increase the supply of sandwiches, which would decrease the price of sandwiches and increase the marginal benefit per dollar spent for each additional unit consumed.

# Unit 2 Practice Questions - ALL

**206.** ***Include correctly labeled diagrams, if useful or required, in explaining your answers. A correctly labeled diagram must have all axes and curves clearly labeled and must show directional changes. If the question prompts you to "Calculate," you must show how you arrived at your final answer.***

*The table below shows the total variable co*sts faced by Raskin's Clothing Store for different quantities of Good D sold.

| Quantity | Total Variable Cost |
|---|---|
| 1 | $50 |
| 2 | $105 |
| 3 | $161 |
| 4 | $218 |
| 5 | $276 |
| 6 | $335 |
| 7 | $410 |
| 8 | $540 |
| 9 | $695 |
| 10 | $875 |

Raskin's Clothing Store sells Good D in a perfectly competitive market with a downward-sloping demand curve and an upward-sloping supply curve. The market price is $150 per unit, and the total fixed cost is $85.

(a) Identify the profit-maximizing quantity. Explain using marginal analysis.

(b) Calculate the economic profit at the profit-maximizing quantity you identified in part (a). Show your work.

(c) Calculate the average fixed cost of producing 10 units. Show your work.

(d) Based on your answer to part (b), will the number of firms in the industry increase, decrease, or stay the same in the long run? Explain.

(e) Based on your answer to part (b), will the market price increase, decrease, or stay the same in the long run? Explain.

(f) The income elasticity of demand for Good D is 1.2, and the cross-price elasticity of demand for dresses with respect to the price of Good D is 0.2. Based on your answer to part (e), what will happen to the demand for dresses? Explain.

(g) Now assume that the market in which Raskin's Clothing Store operates is in long-run equilibrium.
(i) Suppose the market demand for Good D increases. Will the profit-maximizing quantity of Good D for Raskin's Clothing Store increase, decrease, or stay the same in the short run? Explain.
(ii) Suppose instead the wages that Raskin's Clothing Store pays its workers decrease. Will the profit-maximizing quantity of Good D for Raskin's Clothing Store increase, decrease, or stay the same in the short run? Explain.

Respond to all parts of the question.

**Part A**

Select a point value to view scoring criteria, solutions, and/or examples and to score the response.

| 0 | 1 ✓ |
|---|---|

The response identifies the profit-maximizing quantity as 8 units and explains that the 8th unit is the last unit where the marginal revenue ( $150$) is greater than the marginal cost ($130$); the firm will not produce the 9th unit because the marginal cost of producing it ( $155$) is greater than the marginal revenue earned ($150$).

**Part B**

Select a point value to view scoring criteria, solutions, and/or examples and to score the response.

| 0 | 1 ✓ |
|---|---|

The response calculates the economic profit as $575 and shows the work.

$Economic\ Profit = TR - TC = 8\,(\$150) - (\$540 + \$85) = \$575$

**Part C**

Select a point value to view scoring criteria, solutions, and/or examples and to score the response.

| 0 | 1 ✓ |
|---|---|

# Unit 2 Practice Questions - ALL

The response calculates the average fixed cost of producing 5 units as $20 and shows the work.

$AFC = \frac{TFC}{Q} = \frac{\$85}{10} = \$8.50$

**Part D**

Select a point value to view scoring criteria, solutions, and/or examples and to score the response.

| 0 | 1 ✓ |
|---|---|

The response states that the number of firms in the industry will increase and explains that positive economic profit will attract new firms to enter the industry.

**Part E**

Select a point value to view scoring criteria, solutions, and/or examples and to score the response.

| 0 | 1 ✓ |
|---|---|

The response states that the market price will decrease and explains that with the entry of firms, the market supply will increase, causing the price to decrease.

**Part F**

Select a point value to view scoring criteria, solutions, and/or examples and to score the response.

| 0 | 1 ✓ |
|---|---|

The response states that that the demand for dresses will decrease and explains that the positive cross-price elasticity of demand for dresses with respect to the price of Good D means that the goods are substitutes; therefore, a decrease in the price of Good D will lead to a decrease in the demand for dresses.

**Part G**

Select a point value to view scoring criteria, solutions, and/or examples and to score the response.

| 0 | 1 | 2 ✓ |
|---|---|---|

The response does both of the following:

· States that the profit-maximizing quantity of Good D will increase and explains that the increase in market demand will increase the market price (the firm's marginal revenue), which will shift the marginal revenue curve upward at each quantity so that marginal cost will intersect marginal revenue at a higher quantity.

· States that the profit-maximizing quantity of Good D will increase and explains that wages are a variable cost, so a decrease in wages will shift the marginal cost curve downward at each quantity so that marginal cost will intersect marginal revenue at a higher quantity.

# Unit 2 Practice Questions - ALL

**207. Include correctly labeled diagrams, if useful or required, in explaining your answers. A correctly labeled diagram must have all axes and curves clearly labeled and must show directional changes. If the question prompts you to "Calculate," you must show how you arrived at your final answer.**

The table below shows the total variable costs faced by Saif's General Store for different quantities of Good C sold.

| Quantity | Total Variable Cost |
|---|---|
| 1 | $50 |
| 2 | $103 |
| 3 | $165 |
| 4 | $232 |
| 5 | $310 |
| 6 | $393 |
| 7 | $481 |
| 8 | $581 |
| 9 | $690 |
| 10 | $810 |

Saif's General Store sells Good C in a perfectly competitive market with a downward-sloping demand curve and an upward-sloping supply curve. The market price is $\$90$ per unit, and the total fixed cost is $\$275$.

(a) Identify the profit-maximizing quantity. Explain using marginal analysis.

(b) Calculate the economic profit at the profit-maximizing quantity you identified in part (a). Show your work.

(c) Calculate the average fixed cost of producing 5 units. Show your work.

(d) Based on your answer to part (b), will the number of firms in the industry increase, decrease, or stay the same in the long run? Explain.

(e) Based on your answer to part (b), will the market price increase, decrease, or stay the same in the long run? Explain.

(f) The income elasticity of demand for Good C is $-1.5$, and the cross-price elasticity of demand for hats with respect to the price of Good C is $-0.6$. Based on your answer to part (e), what will happen to the demand for hats? Explain.

(g) Now assume that the market in which Saif's General Store operates is in long-run equilibrium.
(i) Suppose the market demand for Good C decreases. Will the profit-maximizing quantity of Good C for Saif's General Store increase, decrease, or stay the same in the short run? Explain.
(ii) Suppose instead the wages that Saif's General Store pays its workers increase. Will the profit-maximizing quantity of Good C for Saif's General Store increase, decrease, or stay the same in the short run? Explain.

Respond to all parts of the question.

**Part A**

Select a point value to view scoring criteria, solutions, and/or examples and to score the response.

| 0 | 1 ✓ |
|---|---|

The response identifies the profit-maximizing quantity as 7 units and explains that the $7^{th}$ unit is the last unit where the marginal revenue ( $90) is greater than the marginal cost ($88); the firm will not produce the $8^{th}$ unit because the marginal cost of producing it ( $100) is greater than the marginal revenue earned ($90).

**Part B**

Select a point value to view scoring criteria, solutions, and/or examples and to score the response.

| 0 | 1 ✓ |
|---|---|

The response calculates the economic profit as $-\$126$ and shows the work.

$Economic\ Profit = TR - TC = 7\,(\$90) - (\$481 + \$275) = -\$126$

**Part C**

Select a point value to view scoring criteria, solutions, and/or examples and to score the response.

| 0 | 1 ✓ |
|---|---|

# Unit 2 Practice Questions - ALL

The response calculates the average fixed cost as $55 and shows the work.

$AFC = \frac{TFC}{Q} = \frac{\$275}{5} = \$55$

**Part D**

Select a point value to view scoring criteria, solutions, and/or examples and to score the response.

| 0 | 1 ✓ |
|---|---|

The response states that the number of firms in the industry will decrease and explains that negative economic profit will cause firms to exit the industry.

**Part E**

Select a point value to view scoring criteria, solutions, and/or examples and to score the response.

| 0 | 1 ✓ |
|---|---|

The response states that the market price will increase and explains that with the exit of firms, the market supply will decrease, causing the price to increase.

**Part F**

Select a point value to view scoring criteria, solutions, and/or examples and to score the response.

| 0 | 1 ✓ |
|---|---|

The response states that that the demand for hats will decrease and explains that the negative cross-price elasticity of demand for hats with respect to the price of Good C means that the goods are complements; therefore, an increase in the price of Good C will lead to a decrease in the demand for hats.

**Part G**

Select a point value to view scoring criteria, solutions, and/or examples and to score the response.

| 0 | 1 | 2 ✓ |
|---|---|---|

The response does both of the following:

· States that the profit-maximizing quantity of Good C will decrease and explains that the decrease in market demand will decrease the market price (the firm's marginal revenue), which will shift the marginal revenue curve downward at each quantity so that marginal cost will intersect marginal revenue at a lower quantity.

· States that the profit-maximizing quantity of Good C will decrease and explains that wages are a variable cost, so an increase in wages will shift the marginal cost curve upward at each quantity so that marginal cost will intersect marginal revenue at a lower quantity.

# Unit 2 Practice Questions - ALL

**208. Include correctly labeled diagrams, if useful or required, in explaining your answers. A correctly labeled diagram must have all axes and curves clearly labeled and must show directional changes. If the question prompts you to "Calculate," you must show how you arrived at your final answer.**

The table below shows the total costs faced by Sarah's Tool Store for different quantities of Good J sold.

| Quantity | Total Cost |
|---|---|
| 0 | $110 |
| 1 | $145 |
| 2 | $175 |
| 3 | $200 |
| 4 | $220 |
| 5 | $245 |
| 6 | $275 |
| 7 | $310 |
| 8 | $350 |
| 9 | $395 |
| 10 | $445 |

Sarah's Tool Store sells Good J in a perfectly competitive market with a downward-sloping demand curve and an upward-sloping supply curve. The market price is $42 per unit.

(a) Calculate the average fixed cost of producing 5 units. Show your work.

(b) Identify the profit-maximizing quantity. Explain using marginal analysis.

(c) Calculate the economic profit at the profit-maximizing quantity you identified in part (b). Show your work.

(d) Based on your answer to part (c), will the number of firms in the industry increase, decrease, or stay the same in the long run? Explain.

(e) Based on your answer to part (c), will the market price increase, decrease, or stay the same in the long run? Explain.

(f) The income elasticity of demand for Good J is $-1.4$, and the cross-price elasticity of demand for widgets with respect to the price of Good J is $-0.25$. Based on your answer to part (e), what will happen to the demand for widgets? Explain.

(g) Now assume that the market in which Sarah's Tool Store operates is in long-run equilibrium at a price of $45 per unit.
(i) Suppose the government imposes a price floor at $40 per unit on the market for Good J. Will consumer surplus in the market for Good J increase, decrease, or stay the same in the short run as a result of the price floor? Explain.
(ii) Suppose instead the cost of energy, a variable cost for Sarah's Tool Store, decreases. Will the profit-maximizing quantity of Good J for Sarah's Tool Store increase, decrease, or stay the same in the short run? Explain.

Respond to all parts of the question.

**Part A**

Select a point value to view scoring criteria, solutions, and/or examples and to score the response.

| 0 | 1 ✓ |
|---|---|

The response calculates the average fixed cost as $22 and shows the work.

$AFC = \frac{TFC}{Q} = \frac{\$110}{5} = \$22$

**Part B**

Select a point value to view scoring criteria, solutions, and/or examples and to score the response.

| 0 | 1 ✓ |
|---|---|

The response identifies the profit-maximizing quantity as 8 units and explains that the 8$^{th}$ unit is the last unit where the marginal revenue ( $42) is greater than the marginal cost ($40); the firm will not produce the 9$^{th}$ unit because the marginal cost of producing it ( $45) is greater than the marginal revenue earned ($42).

**Part C**

Select a point value to view scoring criteria, solutions, and/or examples and to score the response.

# Unit 2 Practice Questions - ALL

| 0 | 1 ✓ |
|---|---|

The response calculates the economic profit as $-\$14$ and shows the work.

$Economic\ Profit = TR - TC = 8\,(\$42) - \$350 = -\$14$

**Part D**

Select a point value to view scoring criteria, solutions, and/or examples and to score the response.

| 0 | 1 ✓ |
|---|---|

The response states that the number of firms in the industry will decrease and explains that negative economic profit will cause firms to exit the industry.

**Part E**

Select a point value to view scoring criteria, solutions, and/or examples and to score the response.

| 0 | 1 ✓ |
|---|---|

The response states that the market price will increase and explains that with the exit of firms, the market supply will decrease, causing the price to increase.

**Part F**

Select a point value to view scoring criteria, solutions, and/or examples and to score the response.

| 0 | 1 ✓ |
|---|---|

The response states that that demand for widgets will decrease and explains the negative cross-price elasticity of demand for widgets with respect to the price of Good J means that the goods are complements; therefore, an increase in the price of Good J will lead to a decrease in the demand for widgets.

**Part G**

Select a point value to view scoring criteria, solutions, and/or examples and to score the response.

| 0 | 1 | 2 ✓ |
|---|---|---|

The response does both of the following:

· States that consumer surplus will stay the same and explains that a price floor below equilibrium is not binding and will not affect the quantity exchanged in the market.

· States that the profit-maximizing quantity of Good J will increase and explains that a decrease in variable cost will shift the marginal cost curve downward at each quantity so that marginal cost will intersect marginal revenue at a higher quantity.

# Unit 2 Practice Questions - ALL

**209. Include correctly labeled diagrams, if useful or required, in explaining your answers. A correctly labeled diagram must have all axes and curves clearly labeled and must show directional changes. If the question prompts you to "Calculate," you must show how you arrived at your final answer.**

The table below shows the total costs faced by Sophia's Lighting Store for different quantities of Good H sold.

| Quantity | Total Cost |
|---|---|
| 0 | $50 |
| 1 | $90 |
| 2 | $110 |
| 3 | $115 |
| 4 | $140 |
| 5 | $185 |
| 6 | $250 |
| 7 | $335 |
| 8 | $440 |
| 9 | $565 |
| 10 | $710 |

Sophia's Lighting Store sells Good H in a perfectly competitive market with a downward-sloping demand curve and an upward-sloping supply curve. The market price is $140 per unit.

(a) Calculate the average fixed cost of producing 2 units. Show your work.

(b) Identify the profit-maximizing quantity. Explain using marginal analysis.

(c) Calculate the economic profit at the profit-maximizing quantity you identified in part (b). Show your work.

(d) Based on your answer to part (c), will the number of firms in the industry increase, decrease, or stay the same in the long run? Explain.

(e) Based on your answer to part (c), will the market price increase, decrease, or stay the same in the long run? Explain.

(f) The income elasticity of demand for Good H is 1.3, and the cross-price elasticity of demand for desk lamps with respect to the price of Good H is $-0.9$. Based on your answer to part (e), what will happen to the demand for desk lamps? Explain.

(g) Now assume that the market in which Sophia's Lighting Store operates is in long-run equilibrium at a price of $130 per unit.
(i) Suppose the government imposes a price floor at $150 per unit on the market for Good H. Will consumer surplus in the market for Good H increase, decrease, or stay the same in the short run as a result of the price floor? Explain.
(ii) Suppose instead the cost of energy, a variable cost for Sophia's Lighting Store, increases. Will the profit-maximizing quantity of Good H for Sophia's Lighting Store increase, decrease, or stay the same in the short run? Explain.

Respond to all parts of the question.

**Part A**

Select a point value to view scoring criteria, solutions, and/or examples and to score the response.

| 0 | 1 ✓ |
|---|---|

The response calculates the average fixed cost as $25 and shows the work.

$AFC = \frac{TFC}{Q} = \frac{\$50}{2} = \$25$

**Part B**

Select a point value to view scoring criteria, solutions, and/or examples and to score the response.

| 0 | 1 ✓ |
|---|---|

The response identifies the profit-maximizing quantity as 9 units and explains that the 9th unit is the last unit where the marginal revenue ( $140) is greater than the marginal cost ($125); the firm will not produce the 10th unit because the marginal cost of producing it ( $145) is greater than the marginal revenue earned ($140).

**Part C**

Select a point value to view scoring criteria, solutions, and/or examples and to score the response.

# Unit 2 Practice Questions - ALL

| 0 | 1 ✓ |
|---|---|

The response calculates the economic profit as $695 and shows the work.

$Economic\ Profit = TR - TC = 9\,(\$140) - \$565 = \$695$

**Part D**

Select a point value to view scoring criteria, solutions, and/or examples and to score the response.

| 0 | 1 ✓ |
|---|---|

The response states that the number of firms in the industry will increase and explains that positive economic profit will attract new firms to enter the industry.

**Part E**

Select a point value to view scoring criteria, solutions, and/or examples and to score the response.

| 0 | 1 ✓ |
|---|---|

The response states that the market price will decrease and explains that with the entry of firms, the market supply will increase, causing the price to decrease.

**Part F**

Select a point value to view scoring criteria, solutions, and/or examples and to score the response.

| 0 | 1 ✓ |
|---|---|

The response states that that the demand for desk lamps will increase and explains that the negative cross-price elasticity of demand for desk lamps with respect to the price of Good H means that the goods are complements; therefore, a decrease in the price of Good H will lead to an increase in the demand for desk lamps.

**Part G**

Select a point value to view scoring criteria, solutions, and/or examples and to score the response.

| 0 | 1 | 2 ✓ |
|---|---|---|

The response does both of the following:

· States that consumer surplus will decrease and explains that a price floor above the equilibrium price is binding and the quantity exchanged in the market will be limited by the quantity demanded, which is less than the equilibrium quantity, thus decreasing consumer surplus.

· States that the profit-maximizing quantity of Good H will decrease and explains that an increase in variable cost will shift the marginal cost curve upward at each quantity so that marginal cost will intersect marginal revenue at a lower quantity.

# Unit 2 Practice Questions - ALL

**210.** ***Include correctly labeled diagrams, if useful or required, in explaining your answers. A correctly labeled diagram must have all axes and curves clearly labeled and must show directional changes. If the question prompts you to "Calculate," you must show how you arrived at your final answer.***

The table below shows the total costs faced by Surisitee's Sporting Goods Store for different quantities of Good Y sold.

| Quantity | Total Cost |
|---|---|
| 0 | $85 |
| 1 | $105 |
| 2 | $130 |
| 3 | $165 |
| 4 | $210 |
| 5 | $290 |
| 6 | $410 |
| 7 | $580 |
| 8 | $810 |
| 9 | $1,110 |
| 10 | $1,490 |

Surisitee's Sporting Goods Store sells Good Y in a perfectly competitive market with a downward-sloping demand curve and an upward-sloping supply curve. The market price is $40 per unit.

(a) Calculate the average fixed cost of producing 2 units. Show your work.

(b) Identify the profit-maximizing quantity. Explain using marginal analysis.

(c) Calculate the economic profit at the profit-maximizing quantity you identified in part (b). Show your work.

(d) Based on your answer to part (c), will the number of firms in the industry increase, decrease, or stay the same in the long run? Explain.

(e) Based on your answer to part (c), will the market price increase, decrease, or stay the same in the long run? Explain.

(f) The income elasticity of demand for Good Y is $-2.5$, and the cross-price elasticity of demand for basketballs with respect to the price of Good Y is $-0.8$. Based on your answer to part (e), what will happen to the demand for basketballs? Explain.

(g) Now assume that the market in which Surisitee's Sporting Goods Store operates is in long-run equilibrium.
(i) Suppose the rent paid by Surisitee's Sporting Goods Store increases. Will Surisitee's Sporting Goods Store's profit-maximizing quantity of Good Y increase, decrease, or stay the same in the short run? Explain.
(ii) Instead suppose Surisitee's Sporting Goods Store hires labor in a perfectly competitive market and the market wage decreases. Will Surisitee's Sporting Goods Store's profit-maximizing quantity of Good Y increase, decrease, or stay the same in the short run? Explain.

Respond to all parts of the question.

**Part A**

Select a point value to view scoring criteria, solutions, and/or examples and to score the response.

| 0 | 1 ✓ |
|---|---|

The response calculates the average fixed cost as $42.50 and shows the work.

$AFC = \frac{TFC}{Q} = \frac{\$85}{2} = \$42.50$

**Part B**

Select a point value to view scoring criteria, solutions, and/or examples and to score the response.

| 0 | 1 ✓ |
|---|---|

The response identifies the profit-maximizing quantity as 3 units and explains that the 3rd unit is the last unit where the marginal revenue ( $40) is greater than the marginal cost ($35); the firm will not produce the 4th unit because the marginal cost of producing it ( $45) is greater than the marginal revenue earned ($40).

**Part C**

Select a point value to view scoring criteria, solutions, and/or examples and to score the response.

# Unit 2 Practice Questions - ALL

| 0 | 1 ✓ |
|---|---|

The response calculates the economic profit as $-\$45$ and shows the work.

$Economic\,Profit = TR - TC = 3(\$40) - \$165 = -\$45$

**Part D**

Select a point value to view scoring criteria, solutions, and/or examples and to score the response.

| 0 | 1 ✓ |
|---|---|

The response states that the number of firms in the industry will decrease and explains that negative economic profit will cause firms to exit the industry.

**Part E**

Select a point value to view scoring criteria, solutions, and/or examples and to score the response.

| 0 | 1 ✓ |
|---|---|

The response states that the market price will increase and explains that with the exit of firms, the market supply will decrease, causing the price to increase.

**Part F**

Select a point value to view scoring criteria, solutions, and/or examples and to score the response.

| 0 | 1 ✓ |
|---|---|

The response states that that demand for basketballs will decrease and explains that the negative cross-price elasticity of demand for basketballs with respect to the price of Good Y means that the goods are complements; therefore, an increase in the price of Good Y will lead to a decrease in the demand for basketballs.

**Part G**

Select a point value to view scoring criteria, solutions, and/or examples and to score the response.

| 0 | 1 | 2 ✓ |
|---|---|---|

The response does both of the following:

· States that the profit-maximizing quantity of Good Y will stay the same in the short run and explains that a change in fixed cost does not affect the marginal cost.

· States that the profit-maximizing quantity of Good Y will increase and explains that a decrease in the market wage will decrease the wage the firm pays its workers because the firm is a wage-taker in a perfectly competitive market; wages are a variable cost, so a decrease in the wage will shift the marginal cost curve downward at each quantity so that marginal cost will intersect marginal revenue at a higher quantity.

# Unit 2 Practice Questions - ALL

**211. Include correctly labeled diagrams, if useful or required, in explaining your answers. A correctly labeled diagram must have all axes and curves clearly labeled and must show directional changes. If the question prompts you to "Calculate," you must show how you arrived at your final answer.**

The table below shows the total variable costs faced by Steve's Home Appliances Store for different quantities of Good L sold.

| Quantity | Total Variable Cost |
|---|---|
| 1 | $55 |
| 2 | $105 |
| 3 | $152 |
| 4 | $205 |
| 5 | $270 |
| 6 | $345 |
| 7 | $428 |
| 8 | $525 |
| 9 | $630 |
| 10 | $745 |

Steve's Home Appliances Store sells Good L in a perfectly competitive market with a downward-sloping demand curve and an upward-sloping supply curve. The market price is $80 per unit, and the total fixed cost is $145.

(a) Identify the profit-maximizing quantity. Explain using marginal analysis.

(b) Calculate the economic profit at the profit-maximizing quantity you identified in part (a). Show your work.

(c) Calculate the average fixed cost of producing 5 units. Show your work.

(d) Based on your answer to part (b), will the number of firms in the industry increase, decrease, or stay the same in the long run? Explain.

(e) Based on your answer to part (b), will the market price increase, decrease, or stay the same in the long run? Explain.

(f) The income elasticity of demand for Good L is $-0.8$, and the cross-price elasticity of demand for coffee machines with respect to the price of Good L is $0.25$. Based on your answer to part (e), what will happen to the demand for coffee machines? Explain.

(g) Now assume that the market in which Steve's Home Appliances Store operates is in long-run equilibrium at a price of $90 per unit.
(i) Suppose annual property taxes for Steve's Home Appliances Store decrease by $7,000. Will the profit-maximizing quantity of Good L for Steve's Home Appliances Store increase, decrease, or stay the same in the short run? Explain.
(ii) Instead suppose the government imposes a price floor at $70 on the market for Good L. Will deadweight loss in the market for Good L increase, decrease, or stay the same in the short run as a result of the price floor? Explain.

Respond to all parts of the question.

**Part A**

Select a point value to view scoring criteria, solutions, and/or examples and to score the response.

| 0 | 1 ✓ |
|---|---|

The response identifies the profit-maximizing quantity as 6 units and explains that the 6th unit is the last unit where the marginal revenue ( $80) is greater than the marginal cost ($75); the firm will not produce the 7th unit because the marginal cost of producing it ( $83) is greater than the marginal revenue earned ($80).

**Part B**

Select a point value to view scoring criteria, solutions, and/or examples and to score the response.

| 0 | 1 ✓ |
|---|---|

The response calculates the economic profit as $-$10 and shows the work.

$Economic\ Profit = TR - TC = 6\,(\$80) - (\$345 + \$145) = -\$10$

**Part C**

Select a point value to view scoring criteria, solutions, and/or examples and to score the response.

| 0 | 1 ✓ |
|---|---|

# Unit 2 Practice Questions - ALL

The response calculates the average fixed cost as $29 and shows the work.

$AFC = \frac{TFC}{Q} = \frac{\$145}{5} = \$29$

**Part D**

Select a point value to view scoring criteria, solutions, and/or examples and to score the response.

| 0 | 1 ✓ |
|---|---|

The response states that the number of firms in the industry will decrease and explains that negative economic profit will cause firms to exit the industry.

**Part E**

Select a point value to view scoring criteria, solutions, and/or examples and to score the response.

| 0 | 1 ✓ |
|---|---|

The response states that the market price will increase and explains that with the exit of firms, the market supply will decrease, causing the price to increase.

**Part F**

Select a point value to view scoring criteria, solutions, and/or examples and to score the response.

| 0 | 1 ✓ |
|---|---|

The response states that that the demand for coffee machines will increase and explains that the positive cross-price elasticity of demand for coffee machines with respect to the price of Good L means that the goods are substitutes; therefore, an increase in the price of Good L will lead to an increase in the demand for coffee machines.

**Part G**

Select a point value to view scoring criteria, solutions, and/or examples and to score the response.

| 0 | 1 | 2 ✓ |
|---|---|---|

The response does both of the following:

· States that the profit-maximizing quantity of Good L will stay the same in the short run and explains that property taxes are a fixed cost and a change in fixed cost does not affect the marginal cost.

· States that deadweight loss will stay the same and explains that a price floor below equilibrium is not binding and will not affect the quantity exchanged in the market.

# Unit 2 Practice Questions - ALL

**212.** ***I*nclude correctly labeled diagrams, if useful or required, in explaining your answers. A correctly labeled diagram must have all axes and curves clearly labeled and must show directional changes. If the question prompts you to "Calculate," you must show how you arrived at your final answer.**

The table below shows the total costs faced by Susie's Diner for different quantities of Good Q sold.

| Quantity | Total Cost |
|---|---|
| 0 | $25 |
| 1 | $29 |
| 2 | $31 |
| 3 | $34 |
| 4 | $40 |
| 5 | $49 |
| 6 | $61 |
| 7 | $76 |
| 8 | $94 |
| 9 | $115 |
| 10 | $139 |

Susie's Diner sells Good Q in a perfectly competitive market with a downward-sloping demand curve and an upward-sloping supply curve. The market price is $8 per unit.

(a) Calculate the average fixed cost of producing 2 units. Show your work.

(b) Identify the profit-maximizing quantity. Explain using marginal analysis.

(c) Calculate the economic profit at the profit-maximizing quantity you identified in part (b). Show your work.

(d) Based on your answer to part (c), will the number of firms in the industry increase, decrease, or stay the same in the long run? Explain.

(e) Based on your answer to part (c), will the market price increase, decrease, or stay the same in the long run? Explain.

(f) The income elasticity of demand for Good Q is $-1.3$, and the cross-price elasticity of demand for cheeseburgers with respect to the price of Good Q is $-0.3$. Based on your answer to part (e), what will happen to the demand for cheeseburgers? Explain.

(g) Now assume that the market in which Susie's Diner operates is in long-run equilibrium at a price of $10 per unit.
(i) Suppose delivery costs per order for Susie's Diner decrease. Will the profit-maximizing quantity of Good Q for Susie's Diner increase, decrease, or stay the same in the short run? Explain.
(ii) Instead suppose the government imposes a price ceiling of $6 on the market for Good Q. Will total economic surplus in the market for Good Q increase, decrease, or stay the same in the short run as a result of the price ceiling? Explain.

Respond to all parts of the question.

**Part A**

Select a point value to view scoring criteria, solutions, and/or examples and to score the response.

| 0 | 1 ✓ |
|---|---|

The response calculates the average fixed cost as $12.50 and shows the work.

$AFC = \frac{TFC}{Q} = \frac{\$25}{2} = \$12.50$

**Part B**

Select a point value to view scoring criteria, solutions, and/or examples and to score the response.

| 0 | 1 ✓ |
|---|---|

The response identifies the profit-maximizing quantity as 4 units and explains that the $4^{th}$ unit is the last unit where the marginal revenue ( $8) is greater than the marginal cost (6)$; the firm will not produce the $5^{th}$ unit because the marginal cost of producing it $(9) is greater than the marginal revenue earned (8)$.

**Part C**

Select a point value to view scoring criteria, solutions, and/or examples and to score the response.

| 0 | 1 ✓ |
|---|---|

# Unit 2 Practice Questions - ALL

The response calculates the economic profit as $-\$8$ and shows the work.

$Economic\ Profit = TR - TC = 4\,(\$8) - \$40 = -\$8$

**Part D**

Select a point value to view scoring criteria, solutions, and/or examples and to score the response.

| 0 | 1 ✓ |
|---|---|

The response states that the number of firms in the industry will decrease and explains that negative economic profit will cause firms to exit the industry.

**Part E**

Select a point value to view scoring criteria, solutions, and/or examples and to score the response.

| 0 | 1 ✓ |
|---|---|

The response states that the market price will increase and explains that with the exit of firms, the market supply will decrease, causing the price to increase.

**Part F**

Select a point value to view scoring criteria, solutions, and/or examples and to score the response.

| 0 | 1 ✓ |
|---|---|

The response states that that demand for cheeseburgers will decrease and explains that the negative cross-price elasticity of demand for cheeseburgers with respect to the price of Good Q means that the goods are complements; therefore, an increase in the price of Good Q will lead to a decrease in the demand for cheeseburgers.

**Part G**

Select a point value to view scoring criteria, solutions, and/or examples and to score the response.

| 0 | 1 | 2 ✓ |
|---|---|---|

The response does both of the following:

· States that the profit-maximizing quantity of Good Q will increase and explains that delivery costs per order are a variable cost, so a decrease in delivery costs per order will shift the marginal cost curve downward at each quantity so that marginal cost will intersect marginal revenue at a higher quantity

· States that total economic surplus will decrease and explains that a price ceiling below the equilibrium price is binding and the quantity supplied will decrease, therefore decreasing total surplus.

# Unit 2 Practice Questions - ALL

**213. Include correctly labeled diagrams, if useful or required, in explaining your answers. A correctly labeled diagram must have all axes and curves clearly labeled and must show directional changes. If the question prompts you to "Calculate," you must show how you arrived at your final answer.**

The table below shows the total variable costs faced by Tom's Toy Store for different quantities of Good B sold.

| Quantity | Total Variable Cost |
|---|---|
| 1 | $3 |
| 2 | $8 |
| 3 | $14 |
| 4 | $23 |
| 5 | $38 |
| 6 | $58 |
| 7 | $83 |
| 8 | $113 |
| 9 | $148 |
| 10 | $188 |

Tom's Toy Store sells Good B in a perfectly competitive market with a downward-sloping demand curve and an upward-sloping supply curve. The market price is $21 per unit, and the total fixed cost is $50.

(a) Identify the profit-maximizing quantity. Explain using marginal analysis.

(b) Calculate the economic profit at the profit-maximizing quantity you identified in part (a). Show your work.

(c) Calculate the average fixed cost of producing 4 units. Show your work.

(d) Based on your answer to part (b), will the number of firms in the industry increase, decrease, or stay the same in the long run? Explain.

(e) Based on your answer to part (b), will the market price increase, decrease, or stay the same in the long run? Explain.

(f) The income elasticity of demand for Good B is 1.5, and the cross-price elasticity of demand for teddy bears with respect to the price of Good B is $-0.2$. Based on your answer to part (e), what will happen to the demand for teddy bears? Explain.

(g) Now assume that the market in which Tom's Toy Store operates is in long-run equilibrium.
(i) Suppose the market demand for Good B increases. Will the profit-maximizing quantity of Good B for Tom's Toy Store increase, decrease, or stay the same in the short run? Explain.
(ii) Suppose instead the wages that Tom's Toy Store pays its workers decrease. Will the profit-maximizing quantity of Good B for Tom's Toy Store increase, decrease, or stay the same in the short run? Explain.

Respond to all parts of the question.

**Part A**

Select a point value to view scoring criteria, solutions, and/or examples and to score the response.

| 0 | 1 ✓ |
|---|---|

The response identifies the profit-maximizing quantity as 6 units and explains that the 6th unit is the last unit where the marginal revenue ( $21) is greater than the marginal cost ($20); the firm will not produce the 7th unit because the marginal cost of producing it ( $25) is greater than the marginal revenue earned ($21).

**Part B**

Select a point value to view scoring criteria, solutions, and/or examples and to score the response.

| 0 | 1 ✓ |
|---|---|

The response calculates the economic profit as $18 and shows the work.

$Economic\ Profit = TR - TC = 6\,(\$21) - (\$58 + \$50) = \$18$

**Part C**

Select a point value to view scoring criteria, solutions, and/or examples and to score the response.

| 0 | 1 ✓ |
|---|---|

# Unit 2 Practice Questions - ALL

The response calculates the average fixed cost as $12.50 and shows the work.

$AFC = \frac{TFC}{Q} = \frac{\$50}{4} = \$12.50$

**Part D**

Select a point value to view scoring criteria, solutions, and/or examples and to score the response.

| 0 | 1 ✓ |
|---|---|

The response states that the number of firms in the industry will increase and explains that positive economic profit will attract new firms to enter the industry.

**Part E**

Select a point value to view scoring criteria, solutions, and/or examples and to score the response.

| 0 | 1 ✓ |
|---|---|

The response states that the market price will decrease and explains that with the entry of firms, the market supply will increase, causing the price to decrease.

**Part F**

Select a point value to view scoring criteria, solutions, and/or examples and to score the response.

| 0 | 1 ✓ |
|---|---|

The response states that that the demand for teddy bears will increase and explains that the negative cross-price elasticity of demand for teddy bears with respect to the price of Good B means that the goods are complements; therefore, a decrease in the price of Good B will lead to an increase in the demand for teddy bears.

**Part G**

Select a point value to view scoring criteria, solutions, and/or examples and to score the response.

| 0 | 1 | 2 ✓ |
|---|---|---|

The response does both of the following:

· States that the profit-maximizing quantity of Good B will increase and explains that the increase in market demand will increase the market price (the firm's marginal revenue), which will shift the marginal revenue curve upward at each quantity so that marginal cost will intersect marginal revenue at a higher quantity.

· States that the profit-maximizing quantity of Good B will increase and explains that wages are a variable cost, so a decrease in wages will shift the marginal cost curve downward at each quantity so that marginal cost will intersect marginal revenue at a higher quantity.

# Unit 2 Practice Questions - ALL

**214.** Tronic is a typical profit-maximizing firm that produces and sells power cords in a constant-cost, perfectly competitive market that is in long-run equilibrium. The market equilibrium price of power cords is $4.

**Part A**

Draw correctly labeled side-by-side graphs for the power cord market and for Tronic, and show each of the following.

i. The market equilibrium price and quantity, labeled $4 and $Q_M$, respectively

ii. Tronic's profit-maximizing price and quantity, labeled $P_F$ and $Q_F$, respectively

iii. Tronic's average total cost curve consistent with long-run equilibrium, labeled ATC

**Part B**

The price of Good X, a complement in consumption to power cords, has increased. On your graphs in part A, show the impact of this change in the short run on each of the following.

i. The new market equilibrium price and quantity of power cords, labeled $P_2$ and $Q_2$, respectively

ii. Tronic's new profit-maximizing price and quantity, labeled $P^*$ and $Q^*$, respectively

iii. The area representing Tronic's economic profit, shaded completely

**Part C**

Given the increase in the price of Good X, what will happen to the market equilibrium price and quantity of power cords as the market adjusts from the short-run equilibrium in part B to the long-run equilibrium? Explain.

**Part D**

Tronic uses the cost-minimizing combination of capital and labor in its production process. The marginal product of labor is 75 power cords, the wage rate is $25, and the rental rate for capital is $40. Calculate the marginal product of capital. Show your work.

**Part E**

Consumers can choose whether to use power cords or smart cables. A 10 percent decrease in the price of smart cables caused the quantity demanded of smart cables to increase by 12 percent and the quantity demanded of power cords to decrease by 8 percent. Calculate the cross-price elasticity of demand for power cords with respect to the price of smart cables. Show your work.

**Part A Point 1**

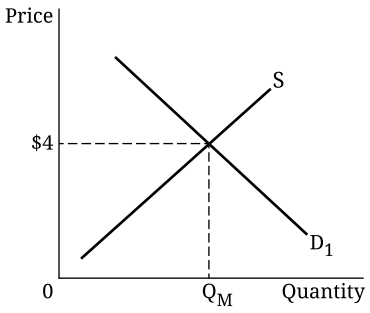
Select a point value to view scoring criteria or to score the response.

| 0 | 1 ✓ |
|---|---|

The response meets the criteria for this point.

*Criteria:*

- Draw a correctly labeled graph of the market for power cords with a downward-sloping demand ($D_1$) curve and an upward-sloping supply (S) curve and label the market equilibrium price as $4 and the market equilibrium quantity as $Q_M$.




**Part A Point 2**

Select a point value to view scoring criteria or to score the response.

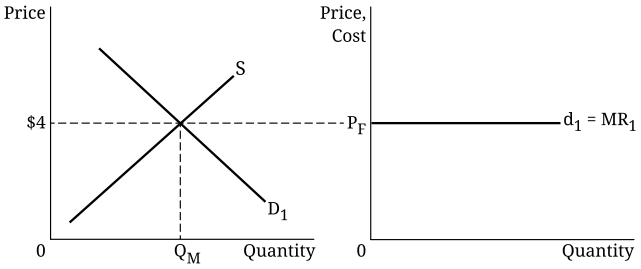
# Unit 2 Practice Questions - ALL

| 0 | 1 ✓ |
|---|---|

The response meets the criteria for this point.

*Criteria:*

- Draw a correctly labeled graph of Tronic that shows the firm's horizontal demand and marginal revenue ($d_1$=$MR_1$) curve extended from the market equilibrium price ($4), and label the firm's price as $P_F$.



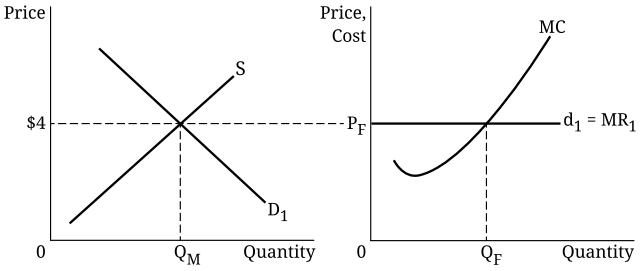

**Part A Point 3**
Select a point value to view scoring criteria or to score the response.

| 0 | 1 ✓ |
|---|---|

The response meets the criteria for this point.

*Criteria:*

- The firm's graph must show a rising marginal cost (MC) curve, and show the firm's profit-maximizing quantity, labeled $Q_F$, where MR = MC.




**Part A Point 4**
Select a point value to view scoring criteria or to score the response.

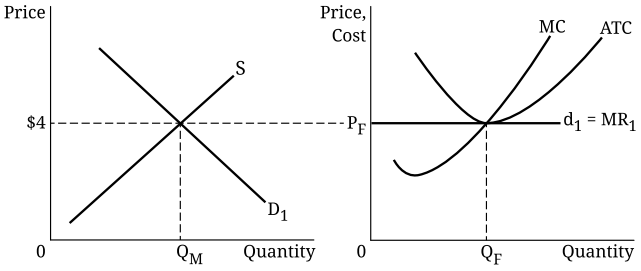
| 0 | 1 ✓ |
|---|---|

The response meets the criteria for this point.

*Criteria:*

- The firm's graph must show the average total cost (ATC) curve tangent to the firm's $d_1$=$MR_1$ curve at $Q_F$, and show the MC curve passing through the minimum point of the ATC curve.

# Unit 2 Practice Questions - ALL



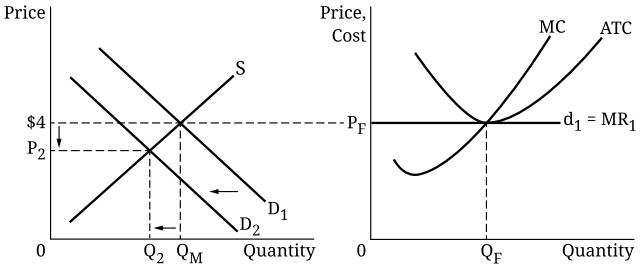

**Part B (i)**
Select a point value to view scoring criteria or to score the response.

| 0 | 1 ✓ |
|---|---|

The response meets the criteria for this point.

*Criteria:*

- The market graph from part A must show a leftward shift of the market demand curve, and show the new market equilibrium price of power cords, labeled $P_2$, and the new market equilibrium quantity of power cords, labeled $Q_2$.



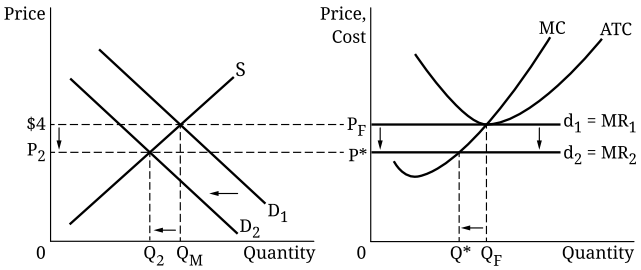

**Part B (ii)**
Select a point value to view scoring criteria or to score the response.

| 0 | 1 ✓ |
|---|---|

The response meets the criteria for this point.

*Criteria:*

- The firm's graph from part A must show a downward shift in the firm's demand and marginal revenue ($d_2$=$MR_2$) curve that is extended from the new market equilibrium price ($P_2$) and show the new profit-maximizing price, labeled P*, and the new profit-maximizing quantity, labeled Q*.




**Part B (iii)**
Select a point value to view scoring criteria or to score the response.

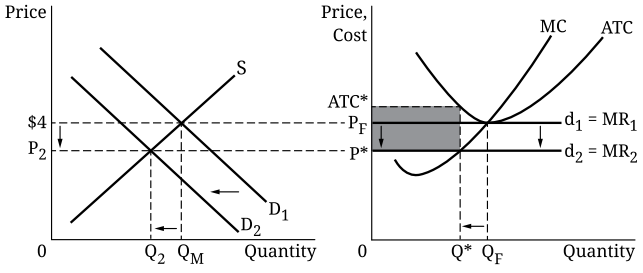
| 0 | 1 ✓ |
|---|---|

The response meets the criterion for this point.

# Unit 2 Practice Questions - ALL

*Criterion:*

- The firm's graph from part A must show the area representing Tronic's negative economic profit, shaded completely.




**Part C**

Select a point value to view scoring criteria or to score the response.

| 0 | 1 ✓ |
|---|---|

The response meets the criteria for this point.

*Criteria:*

- State that the market equilibrium price of power cords will increase and the market equilibrium quantity of power cords will decrease and explain that negative economic profits will cause firms to exit the market, decreasing the market supply of power cords in the long run.

**Part D**

Select a point value to view scoring criteria or to score the response.

| 0 | 1 ✓ |
|---|---|

The response meets the criteria for this point.

*Criteria:*

- Calculate the marginal product of capital as 120 power cords and show your work.

$$\frac{\text{MP}_{\text{Labor}}}{\text{Wage Rate}} = \frac{\text{MP}_{\text{Capital}}}{\text{Rental Rate}}$$

$$\frac{75 \text{ power cords}}{\$25} = \frac{\text{MP}_{\text{Capital}}}{\$40}$$

$\text{MP}_{\text{Capital}} = 120 \text{ power cords}$

**Part E**

Select a point value to view scoring criteria or to score the response.

| 0 | 1 ✓ |
|---|---|

The response meets the criteria for this point.

*Criteria:*

- Calculate the cross-price elasticity of demand as 0.8 and show your work.

$$\text{Cross-Price Elasticity of Demand} = \frac{\%\text{ Change in } Q_D \text{ of Power Cords}}{\%\text{ Change in Price of Smart Cables}} = \frac{-8\%}{-10\%} = 0.8$$

# Unit 2 Practice Questions - ALL

**215.** A 5% increase in the price of Good A results in a 10% decrease in the quantity demanded of Good B. What is the cross-price elasticity between Good A and Good B, and what does this indicate about the relationship between these two goods?

(A)

| Cross-Price Elasticity | Relationship |
|---|---|
| −1 | Complements |

(B) ✓

| Cross-Price Elasticity | Relationship |
|---|---|
| −2 | Complements |

(C)

| Cross-Price Elasticity | Relationship |
|---|---|
| 0.5 | Complements |

(D)

| Cross-Price Elasticity | Relationship |
|---|---|
| −2 | Substitutes |

(E)

| Cross-Price Elasticity | Relationship |
|---|---|
| 0.5 | Substitutes |

**Answer B**

Correct. The cross-price elasticity between Good A and Good B can be calculated as the percentage change in the quantity demanded of Good B divided by the percentage change in the price of Good A. In this example, the price of Good A increased by 5%, and this led to a 10% decrease in the quantity demanded for Good B. Thus, the cross-price elasticity is $\frac{-10\%}{5\%} = -2$. When the cross-price elasticity between two goods is negative, the two goods are complements.

# Unit 2 Practice Questions - ALL

**216. Include correctly labeled diagrams, if useful or required, in explaining your answers. A correctly labeled diagram must have all axes and curves clearly labeled and must show directional changes. If the question prompts you to "Calculate," you must show how you arrived at your final answer.**

The table below shows the total variable costs faced by Waldo's Electronics Store for different quantities of Good K sold.

| Quantity | Total Variable Cost |
|---|---|
| 1 | $60 |
| 2 | $123 |
| 3 | $187 |
| 4 | $254 |
| 5 | $323 |
| 6 | $405 |
| 7 | $489 |
| 8 | $579 |
| 9 | $675 |
| 10 | $777 |

Waldo's Electronics Store sells Good K in a perfectly competitive market with a downward-sloping demand curve and an upward-sloping supply curve. The market price is $75 per unit, and the total fixed cost is $42.

(a) Identify the profit-maximizing quantity. Explain using marginal analysis.

(b) Calculate the economic profit at the profit-maximizing quantity you identified in part (a). Show your work.

(c) Calculate the average fixed cost of producing 7 units. Show your work.

(d) Based on your answer to part (b), will the number of firms in the industry increase, decrease, or stay the same in the long run? Explain.

(e) Based on your answer to part (b), will the market price increase, decrease, or stay the same in the long run? Explain.

(f) The income elasticity of demand for Good K is 0.5, and the cross-price elasticity of demand for televisions with respect to the price of Good K is 0.3. Based on your answer to part (e), what will happen to the demand for televisions? Explain.

(g) Now assume that the market in which Waldo's Electronics Store operates is in long-run equilibrium at a price of $70 per unit.
(i) Suppose annual property taxes for Waldo's Electronics Store increase by $5,000. Will the profit-maximizing quantity of Good K for Waldo's Electronics Store increase, decrease, or stay the same in the short run? Explain.
(ii) Instead suppose the government imposes a price floor at $90 on the market for Good K. Will deadweight loss in the market for Good K increase, decrease, or stay the same in the short run as a result of the price floor? Explain.

Respond to all parts of the question.

**Part A**

Select a point value to view scoring criteria, solutions, and/or examples and to score the response.

| 0 | 1 ✓ |
|---|---|

The response identifies the profit-maximizing quantity as 5 units and explains that the 5th unit is the last unit where the marginal revenue ( $75$) is greater than the marginal cost ($69$); the firm will not produce the 6th unit because the marginal cost of producing it ( $82$) is greater than the marginal revenue earned ($75$).

**Part B**

Select a point value to view scoring criteria, solutions, and/or examples and to score the response.

| 0 | 1 ✓ |
|---|---|

The response calculates the economic profit as $10 and shows the work.

$Economic\ Profit = TR - TC = 5\,(\$75) - (\$323 + \$42) = \$10$

**Part C**

Select a point value to view scoring criteria, solutions, and/or examples and to score the response.

| 0 | 1 ✓ |
|---|---|

# Unit 2 Practice Questions - ALL

The response calculates the average fixed cost as $6 and shows the work.

$AFC = \frac{TFC}{Q} = \frac{\$42}{7} = \$6$

**Part D**

Select a point value to view scoring criteria, solutions, and/or examples and to score the response.

| 0 | 1 ✓ |
|---|---|

The response states that the number of firms in the industry will increase and explains that positive economic profit will attract new firms to enter the industry.

**Part E**

Select a point value to view scoring criteria, solutions, and/or examples and to score the response.

| 0 | 1 ✓ |
|---|---|

The response states that the market price will decrease and explains that with the entry of firms, the market supply will increase, causing the price to decrease.

**Part F**

Select a point value to view scoring criteria, solutions, and/or examples and to score the response.

| 0 | 1 ✓ |
|---|---|

The response states that that the demand for televisions will decrease and explains that the positive cross-price elasticity of demand for televisions with respect to the price of Good K means that the goods are substitutes; therefore, a decrease in the price of Good K will lead to a decrease in the demand for televisions.

**Part G**

Select a point value to view scoring criteria, solutions, and/or examples and to score the response.

| 0 | 1 | 2 ✓ |
|---|---|---|

The response does both of the following:

· States that the profit-maximizing quantity of Good K will stay the same in the short run and explains that property taxes are a fixed cost and a change in fixed cost does not affect the marginal cost.

· States that deadweight loss will increase and explains that a price floor above the equilibrium price is binding and the quantity exchanged in the market will be limited by the quantity demanded, which is less than the equilibrium quantity, thus decreasing total economic surplus.

# Unit 2 Practice Questions - ALL

**217.** ***Include correctly labeled diagrams, if useful or required, in explaining your answers. A correctly labeled diagram must have all axes and curves clearly labeled and must show directional changes. If the question prompts you to "Calculate," you must show how you arrived at your final answer.***

*The table below shows the total costs faced by Yotti's Craft Store for different quantities of Good R sold.*

| Quantity | Total Cost |
|---|---|
| 0 | $3 |
| 1 | $12 |
| 2 | $18 |
| 3 | $28 |
| 4 | $42 |
| 5 | $60 |
| 6 | $82 |
| 7 | $108 |
| 8 | $138 |
| 9 | $172 |
| 10 | $210 |

Yotti's Craft Store sells Good R in a perfectly competitive market with a downward-sloping demand curve and an upward-sloping supply curve. The market price is $12 per unit.

(a) Calculate the average fixed cost of producing 4 units. Show your work.

(b) Identify the profit-maximizing quantity. Explain using marginal analysis.

(c) Calculate the economic profit at the profit-maximizing quantity you identified in part (b). Show your work.

(d) Based on your answer to part (c), will the number of firms in the industry increase, decrease, or stay the same in the long run? Explain.

(e) Based on your answer to part (c), will the market price increase, decrease, or stay the same in the long run? Explain.

(f) The income elasticity of demand for Good R is 0.8, and the cross-price elasticity of demand for balls of yarn with respect to the price of Good R is $-0.1$. Based on your answer to part (e), what will happen to the demand for balls of yarn? Explain.

(g) Now assume that the market in which Yotti's Craft Store operates is in long-run equilibrium at a price of $10 per unit.
(i) Suppose shipping costs per order for Yotti's Craft Store increase. Will the profit-maximizing quantity of Good R for Yotti's Craft Store increase, decrease, or stay the same in the short run? Explain.
(ii) Instead suppose the government imposes a price ceiling of $15 on the market for Good R. Will total economic surplus in the market for Good R increase, decrease, or stay the same in the short run as a result of the price ceiling? Explain.

Respond to all parts of the question.

**Part A**

Select a point value to view scoring criteria, solutions, and/or examples and to score the response.

| 0 | 1 ✓ |
|---|---|

The response calculates the average fixed cost as $0.75 and shows the work.

$AFC = \frac{TFC}{Q} = \frac{\$3}{4} = \$0.75$

**Part B**

Select a point value to view scoring criteria, solutions, and/or examples and to score the response.

| 0 | 1 ✓ |
|---|---|

The response identifies the profit-maximizing quantity as 3 units and explains that the 3rd unit is the last unit where the marginal revenue ($12) is greater than the marginal cost ($10); the firm will not produce the 4th unit because the marginal cost of producing it ($14) is greater than the marginal revenue earned ($12).

**Part C**

Select a point value to view scoring criteria, solutions, and/or examples and to score the response.

# Unit 2 Practice Questions - ALL

| 0 | 1 ✓ |
|---|---|

The response calculates the economic profit as $8 and shows the work.

$Economic\ Profit = TR - TC = 3\,(\$12) - \$28 = \$8$

**Part D**

Select a point value to view scoring criteria, solutions, and/or examples and to score the response.

| 0 | 1 ✓ |
|---|---|

The response states that the number of firms in the industry will increase and explains that positive economic profit will attract new firms to enter the industry.

**Part E**

Select a point value to view scoring criteria, solutions, and/or examples and to score the response.

| 0 | 1 ✓ |
|---|---|

The response states that the market price will decrease and explains that with the entry of firms, the market supply will increase, causing the price to decrease.

**Part F**

Select a point value to view scoring criteria, solutions, and/or examples and to score the response.

| 0 | 1 ✓ |
|---|---|

The response states that that the demand for balls of yarn will increase and explains that the negative cross-price elasticity of demand for balls of yarn with respect to the price of Good R means that the goods are complements; therefore, a decrease in the price of Good R will lead to an increase in the demand for balls of yarn.

**Part G**

Select a point value to view scoring criteria, solutions, and/or examples and to score the response.

| 0 | 1 | 2 ✓ |
|---|---|---|

The response does both of the following:

· States that the profit-maximizing quantity of Good R will decrease and explains that shipping costs per order are a variable cost, so an increase in shipping costs per order will shift the marginal cost curve upward at each quantity so that marginal cost will intersect marginal revenue at a lower quantity.

· States that total economic surplus will stay the same and explains that a price ceiling above equilibrium is not binding and will not affect the number of transactions in the market.

# Unit 2 Practice Questions - ALL

**218. Include correctly labeled diagrams, if useful or required, in explaining your answers. A correctly labeled diagram must have all axes and curves clearly labeled and must show directional changes. If the question prompts you to "Calculate," you must show how you arrived at your final answer.**

The table below shows the total benefit, in dollars, that Zeynep derives from consuming two goods, Good H and slices of pizza.

| Quantity of Good H | Total Benefit of Good H | Slices of Pizza | Total Benefit of Pizza |
|---|---|---|---|
| 0 | $0 | 0 | $0 |
| 1 | *$100* | *1* | *$15* |
| *2* | *$148* | *2* | *$27* |
| *3* | *$172* | *3* | *$36* |
| *4* | *$184* | *4* | *$42* |
| *5* | *$190* | *5* | *$45* |
| *6* | *$192* | *6* | *$45* |

Zeynep has a limited weekly income of $12, and she spends it all on Good H and slices of pizza. Assume the price of Good H is 2 per unit and the price of a slice of pizza is $1.

(a) Identify the quantity of Good H and slices of pizza that will maximize Zeynep's total benefit given her weekly income. Explain using marginal analysis.

(b) Calculate Zeynep's consumer surplus from the second slice of pizza. Show your work.

(c) If Zeynep's weekly income decreases from $12 to 10, would Zeynep be able to buy 5 units of Good H and 3 slices of pizza? Explain using numbers.

(d) Suppose that pizza is produced in a perfectly competitive market and the price of cheese, an input to the production of pizza, increases. If pizza is a normal good, will the number of slices of pizza that will maximize Zeynep's total benefit increase, decrease, or stay the same? Explain.

(e) Suppose instead that the price of Good H decreases by 3% and Zeynep buys 6% more of Good H and 2% less of Good Z. Based on this change, identify whether Good H and Good Z are substitutes, complements, or not related. Explain using numbers.

Respond to all parts of the question.

**Part A**

Select a point value to view scoring criteria, solutions, and/or examples and to score the response.

| 0 | 1 ✓ |
|---|---|

The response identifies that 4 units of Good H and 4 slices of pizza will maximize Zeynep's total benefit given her weekly income of $12 and explains that for the last unit of each good consumed the ratio of the marginal benefit to the price of Good H (6) is equal to the marginal benefit to the price of slices of pizza (6), or

$$\frac{MB_{Good\ H}}{Price_{Good\ H}} = \frac{MB_{Slices\ of\ Pizza}}{Price_{Slices\ of\ Pizza}}$$

$$\frac{\$12}{\$2} = \frac{\$6}{\$1}$$

$$6 = 6$$

**Part B**

Select a point value to view scoring criteria, solutions, and/or examples and to score the response.

| 0 | 1 ✓ |
|---|---|

The response calculates consumer surplus as $11 and shows the work.

$$\text{Consumer Surplus} = \text{Marginal Benefit} - \text{Price} = \$12 - 1 = \$11$$

**Part C**

Select a point value to view scoring criteria, solutions, and/or examples and to score the response.

| 0 | 1 ✓ |
|---|---|

# Unit 2 Practice Questions - ALL

The response states that no, Zeynep would not be able to buy 5 units of Good H and 3 slices of pizza and explains that her total expenditures would be \$13 $(= \$2 \times 5 + \$1 \times 3)$, which is greater than her weekly income of \$10.

**Part D**

Select a point value to view scoring criteria, solutions, and/or examples and to score the response.

| 0 | 1 ✓ |
|---|---|

The response states that the number of slices of pizza that will maximize Zeynep's total benefit will decrease and explains that an increase in the price of an input to production will decrease the supply of pizza, which will increase the price of pizza, and an increase in the price of pizza would increase the total cost of pizza purchased while the total benefit remains the same.

**Part E**

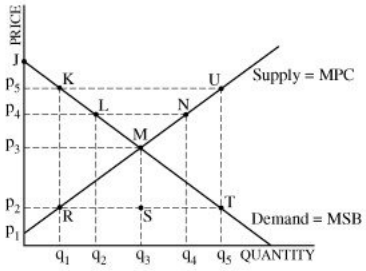
Select a point value to view scoring criteria, solutions, and/or examples and to score the response.

| 0 | 1 ✓ |
|---|---|

The response identifies Good H and Good Z as substitutes and explains that the cross-price elasticity of demand is positive because a 3% decrease in the price of Good H led to a 2% decrease in the demand for Good Z.

# Unit 2 Practice Questions - ALL

**219.**




The graph above shows the perfectly competitive market for hard candies in Country Alpha. In the graph the letters correspond to points, not areas. MPC denotes marginal private cost and MSB denotes marginal social benefit.

(a) Using the labeling on the graph, identify the area representing each of the following at the market equilibrium.

(i) The consumer surplus

(ii) The producer surplus

(b) Assume that the production of each unit of candy creates a negative externality equal to ($p_5$-$p_2$).

Using the labeling on the graph, identify the socially optimal quantity.

(c) Assume that the government imposes a per-unit tax of ($p_5$-$p_2$) to correct for the negative externality. Using the labeling on the graph, identify the area representing each of the following.

(i) The consumer surplus

(ii) The deadweight loss

Respond to all parts of the question.

**Part A**

**2 Points**

- One point is earned for identifying the consumer surplus as $P_3JM$.
- One point is earned for identifying the producer surplus as $P_1P3M$.

| 0 | 1 | 2 ✓ |
|---|---|---|

The student earns all of the following points:

- One point is earned for identifying the consumer surplus as $P_3JM$.
- One point is earned for identifying the producer surplus as $P_1P3M$.

**Part B**

One point is earned for identifying the socially optimal quantity as $q_1$.

| 0 | 1 ✓ |
|---|---|

The student earns all of the following points:

One point is earned for identifying the socially optimal quantity as $q_1$.

**Part C**

**2 Points**

- One point is earned for identifying the consumer surplus as $P_5JK$.
- One point is earned for indicating that there is no deadweight loss.

# Unit 2 Practice Questions - ALL

| 0 | 1 | 2 ✓ |
|---|---|---|

The student earns all of the following points:

- One point is earned for identifying the consumer surplus as $P_5JK$.
- One point is earned for indicating that there is no deadweight loss.

# Unit 2 Practice Questions - ALL

**220.** Respond to all parts of the question.

Include correctly labeled diagrams, if useful or required, in explaining your answers. A correctly labeled diagram must have all axes and curves clearly labeled and must show directional changes. If the question prompts you to "Calculate," you must show how you arrived at your final answer.

In the small country of AgroIsland, the equilibrium price of wheat is $10 per bushel. Wheat is produced in a competitive industry. The world market price of wheat is $20 per bushel.

(a) Assume that AgroIsland currently does not engage in international trade in wheat. Draw a correctly labeled graph to illustrate the market for wheat in AgroIsland and indicate the following.

(i) The equilibrium price, labeled $10

(ii) The equilibrium quantity, labeled $Q^*$

(iii) The domestic producer surplus, shaded completely and labeled PS

(b) On the graph from part (a), show each of the following for AgroIsland if it engages in free trade in the world wheat market.

(i) The world price of a bushel of wheat, labeled $20

(ii) The quantity of wheat supplied by domestic producers, labeled $Q_P$

(iii) The domestic consumer surplus after trade, shaded completely and labeled CS

(c) Given your answers in part (b), how does each of the following change if AgroIsland engages in international trade in the wheat market?

(i) The domestic consumer surplus

(ii) The domestic producer surplus

**Part A**

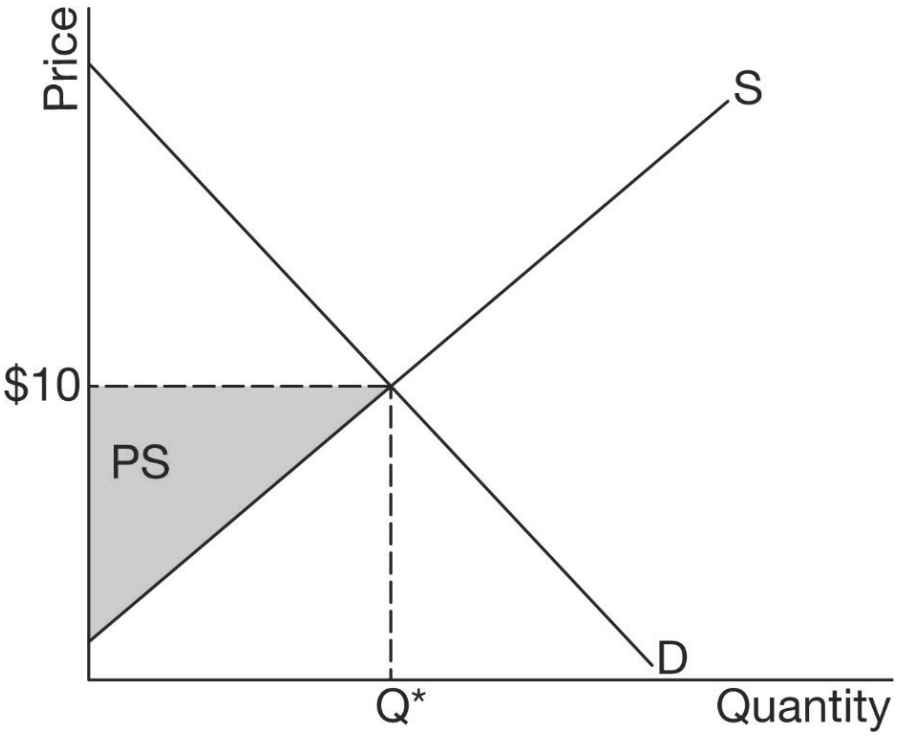
Select a point value to view scoring criteria, solutions, and/or examples and to score the response.

| 0 | 1 | 2 ✓ |
|---|---|---|

The response accurately includes the two criteria below.

- ☐ A correctly labeled graph of the market for wheat and for showing the equilibrium price at $10 and the equilibrium quantity, labeled Q*.
- ☐ The area of producer surplus, completely shaded and labeled PS.

Solution:




**Part B**

# Unit 2 Practice Questions - ALL

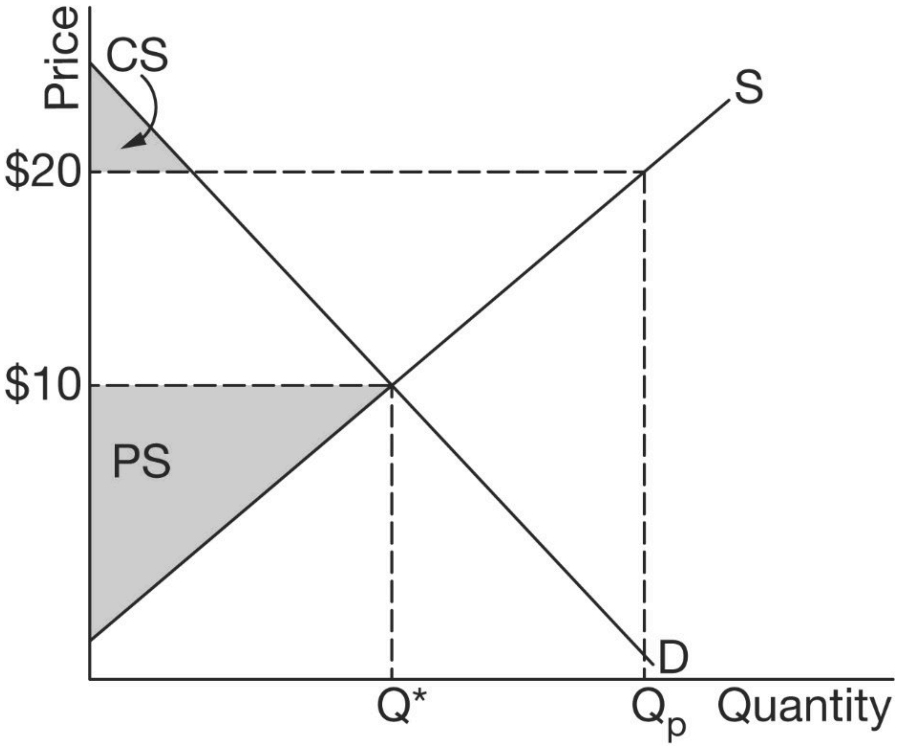
Select a point value to view scoring criteria, solutions, and/or examples and to score the response.

| 0 | 1 | 2 ✓ |
|---|---|---|

The response accurately includes the two criteria below.

- [ ] The world price of a bushel of wheat on the graph at $20 and the quantity of wheat produced domestically, labeled $Q_p$, from the original supply curve
- [ ] · The area of consumer surplus, completely shaded and labeled CS.

Solution:




**Part C**

Select a point value to view scoring criteria, solutions, and/or examples and to score the response.

| 0 | 1 ✓ |
|---|---|

The response states the domestic consumer surplus decreases and the domestic producer surplus increases.

# Unit 2 Practice Questions - ALL

**221. Include correctly labeled diagrams, if useful or required, in explaining your answers. A correctly labeled diagram must have all axes and curves clearly labeled and must show directional changes. If the question prompts you to "Calculate," you must show how you arrived at your final answer.**

The table below shows the marginal benefit, in dollars, that Ahmet derives from consuming two goods, books and Good D.

| Quantity of Books | Marginal Benefit of Books | Quantity of Good D | Marginal Benefit of Good D |
|---|---|---|---|
| 1 | $28 | 1 | $32 |
| 2 | $16 | 2 | $16 |
| 3 | $4 | 3 | $8 |
| 4 | $2 | 4 | $4 |
| 5 | $1 | 5 | $2 |
| 6 | $0 | 6 | $1 |

Ahmet has a limited weekly income of $18, and he spends it all on books and Good D. Assume the price of each book is $4 and the price of Good D is $1 per unit.

(a) Calculate the total consumer surplus from books if Ahmet buys 5 books. Show your work.

(b) Given his weekly income, would Ahmet be able to buy 3 books and 2 units of Good D? Explain using numbers.

(c) Identify the quantity of books and the quantity of Good D that will maximize Ahmet's total benefit given his weekly income. Explain using marginal analysis.

(d) Assume books are is produced in a perfectly competitive market and that there is an increase in the number of buyers in the market for books.
(i) Would Ahmet's total consumer surplus from books if he buys 5 books increase, decrease, or stay the same compared to your answer in part (a) ? Explain.
(ii) Will the quantity of books that will maximize Ahmet's total benefit increase, decrease, or stay the same? Explain.

Respond to all parts of the question.

**Part A**

Select a point value to view scoring criteria, solutions, and/or examples and to score the response.

| 0 | 1 ✓ |
|---|---|

The response calculates the total consumer surplus as $31 and shows the work.

$$\text{Total Consumer Surplus} = \text{Total Benefit} - \text{Total Expenditures} = 51 - 20 = 31$$

**Part B**

Select a point value to view scoring criteria, solutions, and/or examples and to score the response.

| 0 | 1 ✓ |
|---|---|

The response states that yes, Ahmet would be able to buy 3 books and 2 units of Good D and explains that his total expenditures would be $14 $(= 3 \times \$4 + 2 \times \$1)$, which is less than his weekly income of $18.

**Part C**

Select a point value to view scoring criteria, solutions, and/or examples and to score the response.

| 0 | 1 ✓ |
|---|---|

The response identifies that 3 books and 6 units of Good D will maximize Ahmet's total benefit given his weekly income of $18 and explains that for the last unit of each good consumed the ratio of the marginal benefit to the price of books (1) is equal to the ratio of the marginal benefit to the price of Good D (1), or

$$\frac{MB_{Book}}{Price_{Book}} = \frac{MB_{Good\,D}}{Price_{Good\,D}}$$

$$\frac{\$4}{\$4} = \frac{\$1}{\$1}$$

$$1 = 1$$

**Part D**

# Unit 2 Practice Questions - ALL

Select a point value to view scoring criteria, solutions, and/or examples and to score the response.

| 0 | 1 | 2 ✓ |
|---|---|---|

The response does both of the following:

· States that Ahmet's total consumer surplus would decrease and explains that an increase in the number of consumers in the market for books would increase the demand for books, which would increase the price of books, and an increase in the price of books would increase the total cost of 5 books while the total benefit of 5 books remains the same.

· States that the quantity of books that will maximize Ahmet's total benefit will decrease and explains that there has been an increase in the price of books which decreases the marginal benefit per dollar spent that Ahmet gets from each additional book.

# Unit 2 Practice Questions - ALL

**222.** Include correctly labeled diagrams, if useful or required, in explaining your answers. A correctly labeled diagram must have all axes and curves clearly labeled and must show directional changes. If the question prompts you to "Calculate," you must show how you arrived at your final answer.

Anderson Company is a typical firm that manufactures Good G in a constant-cost, perfectly competitive market. Anderson Company is currently earning positive economic profit.

(a) What must be true about the relationship between accounting profit and economic profit if Anderson Company currently incurs both explicit and implicit costs in production?

(b) Draw correctly labeled side-by-side graphs for the market and Anderson Company and show each of the following.

(i) The market equilibrium price and quantity, labeled $P_M$ and $Q_M$, respectively

(ii) The profit-maximizing price and quantity for Anderson Company, labeled $P_F$ and $Q_F$, respectively

(iii) The area representing Anderson Company's positive economic profit, shaded completely

(c) On your graphs in part (b), show what will happen to each of the following if the market for Good G adjusts to long-run equilibrium.

(i) The market equilibrium price and quantity, labeled $P_2$ and $Q_2$, respectively

(ii) Anderson Company's profit-maximizing price and quantity, labeled $P^*$ and $Q^*$, respectively

(d) Assume the production of Good G creates benefits for third parties.

(i) Given this situation, will the market equilibrium quantity be greater than, less than, or equal to the allocatively efficient quantity? Explain.

(ii) The government takes an action that corrects the externality in the market for Good G. As a result of the government's action, does total economic surplus increase, decrease, or stay the same? Explain.

Respond to all parts of the question.

**Part A**

Select a point value to view scoring criteria, solutions, and/or examples and to score the response.

| 0 | 1 ✓ |
|---|---|

The response accurately includes the criterion below.

- ☐ States that Anderson Company's accounting profit must be greater than its economic profit.

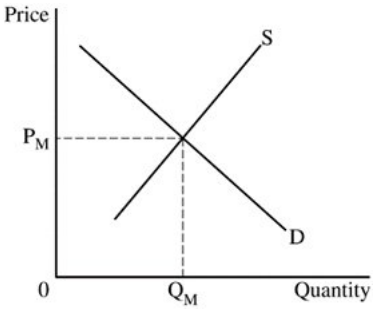
**Part B**

Select a point value to view scoring criteria, solutions, and/or examples and to score the response.

| 0 | 1 | 2 | 3 | 4 | 5 ✓ |
|---|---|---|---|---|---|

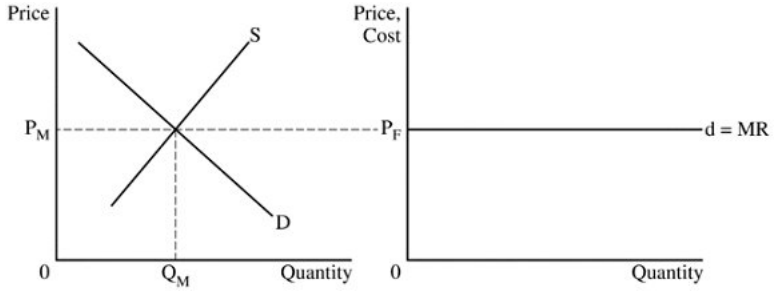
The response accurately includes five of the criteria below.

- ☐ Draws a correctly labeled graph of the market for Good G with a downward-sloping demand (D) curve and upward-sloping supply (S) curve and labels the market equilibrium price as $P_M$ and the market equilibrium quantity as $Q_M$.

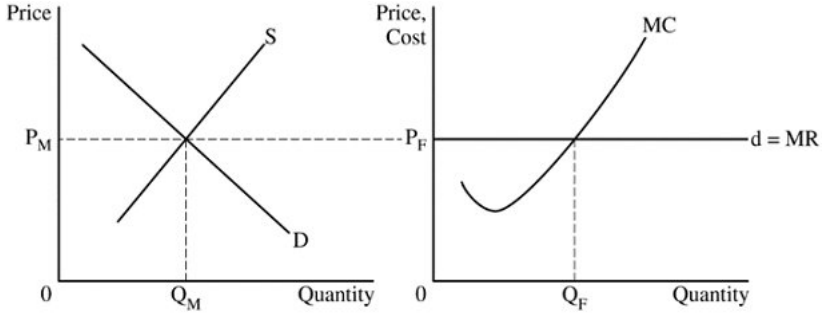



- Shows the firm's horizontal demand and marginal revenue ($d = MR$) curve extended from the market equilibrium price ($P_M$), and labels the firm's price as $P_F$.

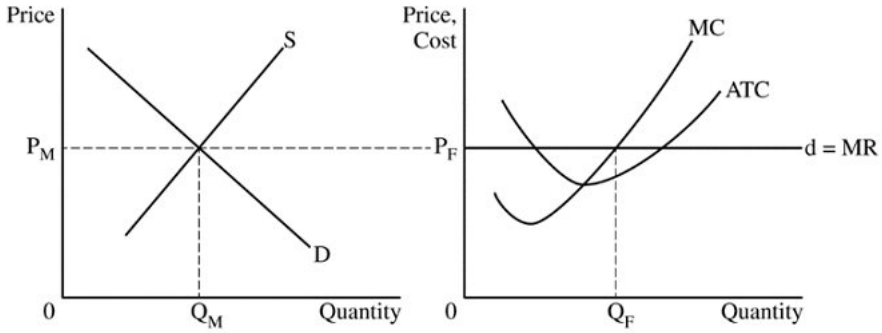
# Unit 2 Practice Questions - ALL



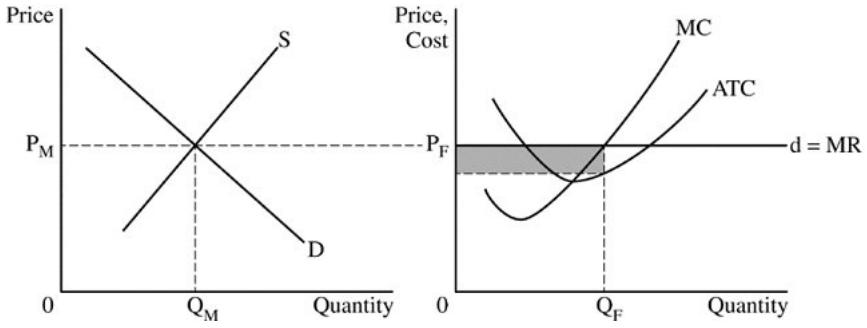

Shows a rising marginal cost (MC) curve and the profit-maximizing quantity, labeled $Q_F$ where MR = MC.




Shows the average total cost (ATC) curve below the firm's demand curve at $Q_F$ and shows the MC curve passing through the minimum point of the ATC curve.




Shows the area representing positive economic profit, shaded completely.




**Part C**

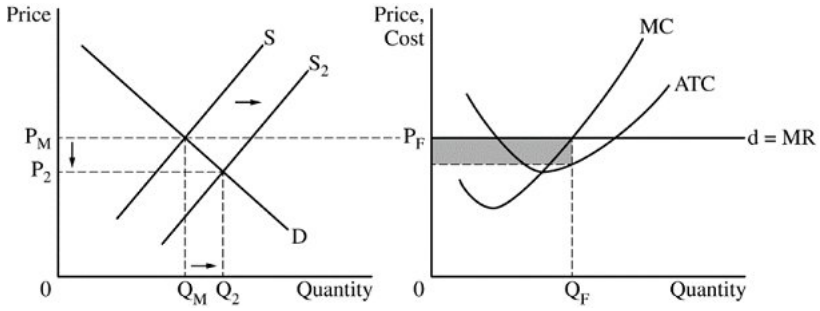
Select a point value to view scoring criteria, solutions, and/or examples and to score the response.

| 0 | 1 | ✓ 2 |
|---|---|---|

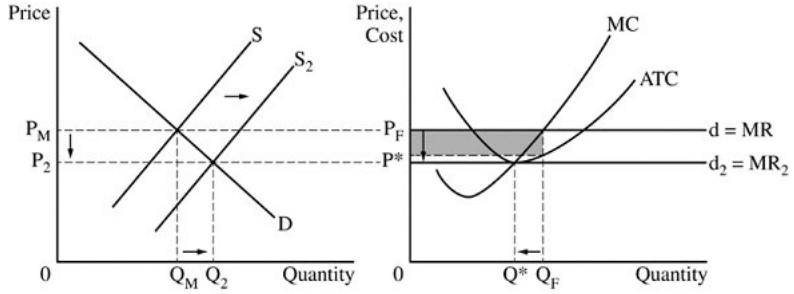
The response accurately includes two of the criteria below.

On the market graph from part (a), shows a rightward shift in the market supply curve, resulting in a lower market equilibrium price, labeled $P_2$, and a greater market equilibrium quantity, labeled $Q_2$.

# Unit 2 Practice Questions - ALL




Shows a lower price, labeled $P^*$, extended from the new market equilibrium price, $P_2$, and shows a lower quantity produced, $Q^*$, at the new intersection point of $P^* = MR_2 = MC = \text{minimum ATC}$.




**Part D**

Select a point value to view scoring criteria, solutions, and/or examples and to score the response.

| 0 | 1 | 2 ✓ |
|---|---|---|

The response accurately includes two of the criteria below.

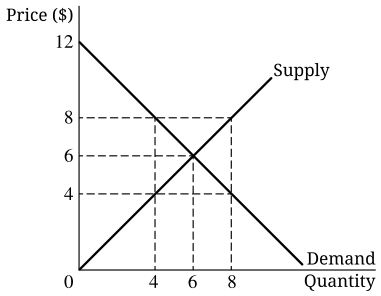
States that the market equilibrium quantity will be less than the allocatively efficient quantity and explains that the positive externality in production causes the marginal social cost to be less than the marginal private cost ($MSC < MPC$) at the market equilibrium.

States that total economic surplus will increase and explains with ONE of the following.

- The quantity produced will increase to the allocatively efficient quantity.
- Deadweight loss will decrease to $0.
- The marginal private cost will equal the marginal social cost, causing the externality to be internalized.

# Unit 2 Practice Questions - ALL

**223.**




Apples are produced in a perfectly competitive market with no government intervention. Which of the following price changes will cause the total economic surplus to increase for the apple market depicted in the graph provided?

(A) A decrease in price from $8 to 6$ ✓

(B) A decrease in price from $6 to 4$

(C) A decrease in price from $6 to 0$

(D) An increase in price from $6 to 8$

(E) An increase in price from $8 to 12$

**Answer A**

Correct. Total economic surplus is maximized at the market equilibrium price of $6. Since a price of 8$ is a disequilibrium price causing deadweight loss to occur, a decrease in price from $8 to 6$ will cause total economic surplus to increase.

# Unit 2 Practice Questions - ALL

**224.** Assume that the market for home security systems is perfectly competitive and currently in equilibrium.

a. Using a correctly labeled graph of supply and demand, show each of the following.

i. The equilibrium price and quantity, labeled as P* and Q*, respectively

ii. The area representing consumer surplus, labeled as CS

iii. The area representing producer surplus, labeled as PS

b. Suppose that the government imposes an effective (binding) price ceiling. Redraw your graph in part (a), and label the ceiling price as $P_2$. Completely shade the area representing the sum of the consumer surplus and the producer surplus after the imposition of the price ceiling.

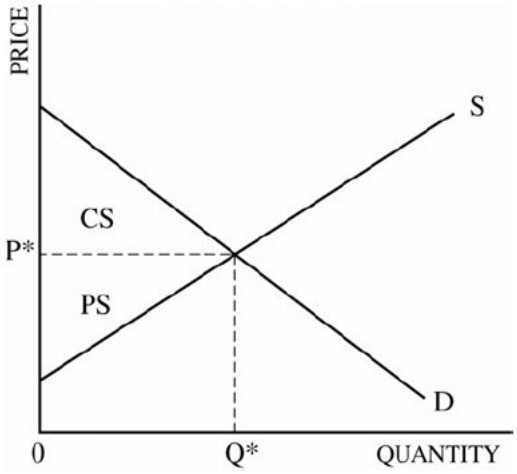
c. Suppose the demand for home security systems decreases and the price ceiling remains binding. Indicate what will happen to each of the following.

i. Consumer surplus

ii. Producer surplus

Respond to all parts of the question.

**Part A**



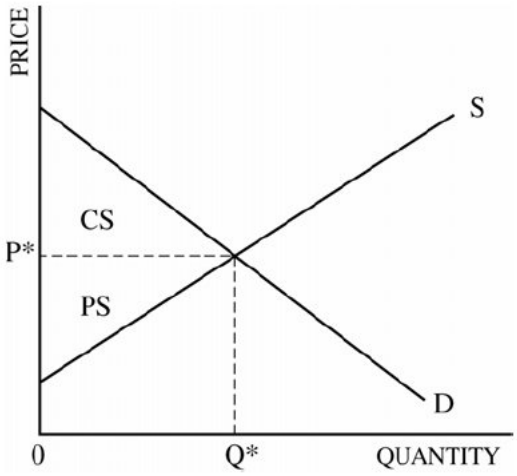

3 points:

- One point is earned for a correctly labeled graph with equilibrium price and quantity.
- One point is earned for showing the correct area of consumer surplus.
- One point is earned for showing the correct area of producer surplus.

| 0 | 1 | 2 | 3 ✓ |
|---|---|---|---|

Student receives 3/3 point(s)

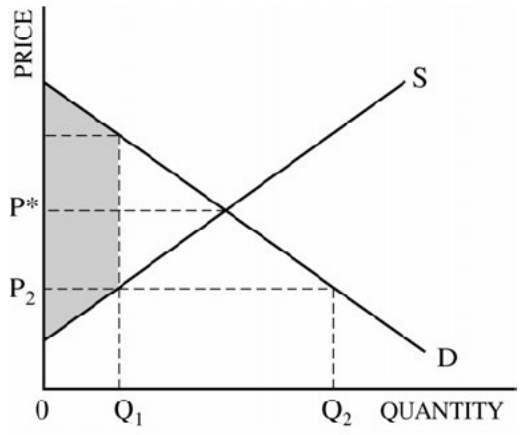
# Unit 2 Practice Questions - ALL




3 points:

- One point is earned for a correctly labeled graph with equilibrium price and quantity.
- One point is earned for showing the correct area of consumer surplus.
- One point is earned for showing the correct area of producer surplus.

**Part B**



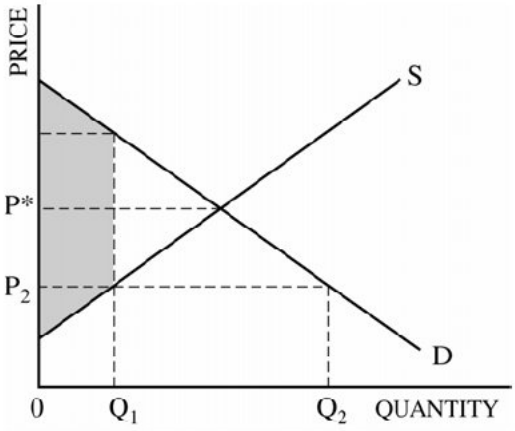

2 points:

- One point is earned for showing the price ceiling below the equilibrium.
- One point is earned for shading the correct area of consumer surplus and producer surplus.

| 0 | 1 | 2 ✓ |
|---|---|---|

Student receives 2/2 point(s)

# Unit 2 Practice Questions - ALL




2 points:

- One point is earned for showing the price ceiling below the equilibrium.
- One point is earned for shading the correct area of consumer surplus and producer surplus.

**Part C**

2 points:

- One point is earned for indicating that consumer surplus will decrease.
- One point is earned for indicating that producer surplus will not change.

| 0 | 1 | 2 ✓ |
|---|---|---|

Student receives 2/2 point(s)

2 points:

- One point is earned for indicating that consumer surplus will decrease.
- One point is earned for indicating that producer surplus will not change.

# Unit 2 Practice Questions - ALL

**225.**

| Price | Supply of Oranges | Demand for Oranges |
|---|---|---|
| $0 | 0 | 20 |
| $5 | 5 | 15 |
| $10 | 10 | 10 |
| $15 | 15 | 5 |
| $20 | 20 | 0 |

The table above shows the supply and demand schedules in the orange market. Assume that the demand and supply curves are linear.

At the market equilibrium price, what are the consumer surplus and the producer surplus?

(A) Consumer surplus is $200; producer surplus is $200

(B) Consumer surplus is $100; producer surplus is $100

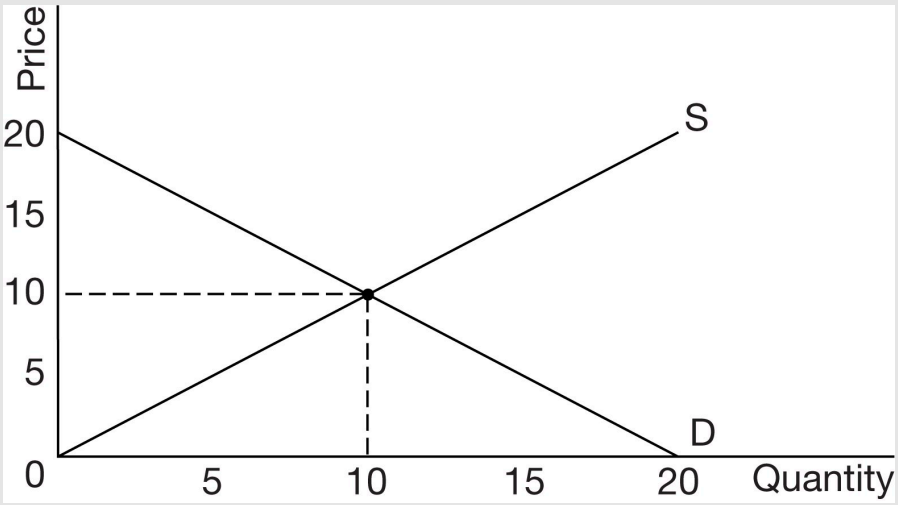
(C) Consumer surplus is $50; producer surplus is $50 ✓

(D) Consumer surplus is $45; producer surplus is $15

(E) Consumer surplus is $10; producer surplus is $10

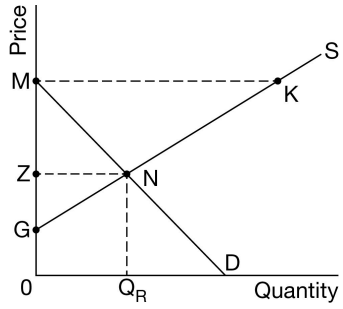
**Answer C**

Correct. The information in the table can be used to draw the supply and demand curves for oranges to find the consumer's surplus and the producer's surplus. The equilibrium price is $10, and the equilibrium quantity is 10. Consumer surplus is measured by the area of the triangle below the demand curve but above the equilibrium price for the quantities between zero and the equilibrium quantity. The area of the triangle representing consumer surplus is $\text{CS} = \frac{(20-10)\times 10}{2} = \$50$. Producer surplus is the area above the supply curve but below the equilibrium price for the quantities between zero and the equilibrium quantity. The area of the triangle representing producer surplus is $\text{PS} = \frac{(10-0)\times 10}{2} = \$50$. The same calculation can be performed without drawing the graph based on the recognition that the supply and demand curves are linear, the X intercept is 20, and the Y intercept is 20.



# Unit 2 Practice Questions - ALL

**226.**




Based on the graph above, the consumer surplus at the market equilibrium price and quantity is shown by which area?

(A) GMK
(B) GMN
(C) GZN
(D) ZMN ✓
(E) MNK

**Answer D**

Correct. Consumer surplus is the difference between the maximum price consumers are willing to pay for a unit of a product (as depicted by the demand curve) and the actual price they do pay. At equilibrium, the consumer surplus is measured by the area of the triangle under the demand curve but above the equilibrium price for the quantities between zero and equilibrium quantity, $Q_R$. It is represented by the area ZMN.

**227.** The economic concept of total consumer surplus refers to which of the following?

(A) The difference between the quantity of a good or service that people purchase and the amount that they actually consume
(B) The overproduction of goods and services relative to the socially optimal level of output
(C) The sum of the differences between the prices that consumers are willing to pay for a good or service and the price they actually pay ✓
(D) The sum of the differences between the prices that consumers are willing to pay for a good or service and the minimum prices that sellers must receive to offer that quantity
(E) The difference between the quantity demanded and the quantity supplied of a product at a given price

**Answer C**

Correct. Consumer surplus is a measure of the benefit a consumer receives from participating in the market. It is the difference between the maximum price a consumer is willing to pay and the price the consumer actually pays. In the context of the demand curve, consumer surplus is given by the area under the demand curve that is above the price.

**228.** The market for tomatoes is in equilibrium at the price of $\$10$, and quantity of $50$ tomatoes. If consumer surplus is $\$400$ and total economic surplus is $\$650$, what is the producer surplus in the tomato market and why?

(A) The producer surplus is $\$0$, because producer surplus is offset by the costs of producing tomatoes.
(B) The producer surplus is $\$250$, because the total surplus less what consumers receive must go to producers. ✓
(C) The producer surplus is $-\$400$, because consumer and producer surplus must offset one another.
(D) The producer surplus is $\$500$, because the producer surplus is the equilibrium price times the equilibrium quantity $= \$10 \times 50 = \$500$.
(E) The producer surplus is $\$650$, because producer surplus and total economic surplus are always equal.

**Answer B**

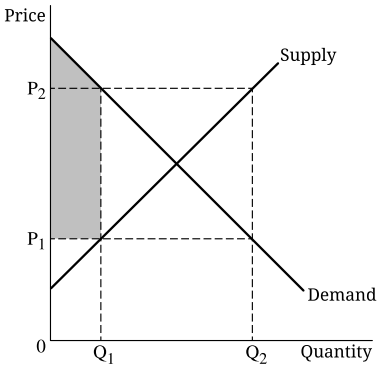
Correct. Total economic surplus $=$ consumer surplus $+$ producer surplus. Since the total economic surplus is $\$650$ and consumer surplus is $\$400$, the producer surplus is $\$650 - \$400 = \$250$.

# Unit 2 Practice Questions - ALL

**229.** Consumer surplus exists because of the

(A) surplus of money that wealthy consumers hold
(B) surplus in marginal product that firms get when they hire an additional worker
(C) willingness of some consumers to pay a price higher than the market price for some units of a good ✓
(D) additional utility that households obtain when the prices of substitutes fall
(E) increase in the availability of goods when income rises

**230.**




Consumer surplus could be the shaded area in which of the following situations?

(A) A price floor set at $P_1$ in the market
(B) A price floor set at $P_2$ in the market
(C) A price ceiling set at $P_1$ in the market ✓
(D) A per-unit subsidy equal to $P_2 - P_1$ granted to producers
(E) A per-unit tax equal to $P_2 - P_1$ imposed on producers

**Answer C**

Correct. The price ceiling set at $P_1$ is binding and will thus result in only a quantity of $Q_1$ of the good being exchanged in the market. Consumer surplus is represented by the difference between the price consumers are willing to pay (represented by the demand curve) and the price they have to pay ($P_1$) for all units consumed ($Q_1$).

**231.** Consumer surplus in a market for a good exists because

(A) binding price floors encourage producers to increase the supply of the good
(B) some consumers would be willing to pay more than the equilibrium price of the good ✓
(C) when the price of the good decreases, most consumers increase their demand for the good
(D) producers do not have market power to set their own price
(E) some producers charge different prices for the good in different markets

**232.** Consumer surplus is defined as

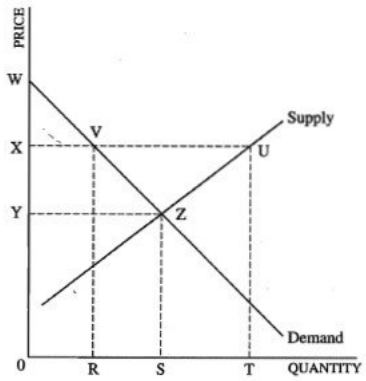
(A) opportunity cost minus total revenue
(B) total revenue minus opportunity cost
(C) the difference between the resource costs and the price that consumers pay
(D) the difference between the value that consumers place on a good and the price they pay ✓
(E) the sum of external costs and benefits

**233.** The difference between the price a consumer would be willing to pay for a cone of ice cream and the actual market price that she pays gives a measure of her

(A) consumer surplus ✓
(B) producer surplus
(C) marginal utility
(D) marginal cost
(E) ability to pay

# Unit 2 Practice Questions - ALL

The following questions refer to the graph below. The market is currently in equilibrium




**234.** In a competition equilibrium consumer surplus is the area of

(A) UVZ

(B) WYZ ✓

(C) RVUT

(D) XVZY

(E) 0YZS

**235.** If a price floor is set at X, the quantity demanded will

(A) increase from 0R to 0S

(B) increase from 0R to 0T

(C) decrease from 0S to 0R ✓

(D) decrease from 0T to 0R

(E) not change

---

**236.** Zucchini is produced in a perfectly competitive market with a downward-sloping demand curve and an upward-sloping supply curve. Dawson Farm is a typical perfectly competitive farm that produces and sells zucchini at the equilibrium price of $1.75 per pound. Which of the following is true?

(A) No buyer in the market is willing to pay more than $1.75 per pound for zucchini.

(B) No buyer in the market is willing to pay more than $1.75 per pound for zucchini from Dawson Farm. ✓

(C) Market demand for zucchini will increase if Dawson Farm lowers its price below $1.75 per pound.

(D) Dawson Farm would lose some but not all of its customers if it increases the price above $1.75 per pound for zucchini.

(E) Dawson Farm would likely be able to increase the demand for its zucchini by advertising.

**Answer B**

Correct. Dawson Farm operates in a perfectly competitive market and therefore is a price taker. No buyer in this market will be willing to pay more than the market price from Dawson Farm, because buyers can buy zucchini from other producers in the market at the same market price of $1.75 per pound.

**237.** The difference between what consumers are willing to pay for units of a good and the price consumers actually pay for units of the good is called

(A) marginal utility

(B) producer surplus

(C) consumer surplus ✓

(D) economic rent

(E) a positive externality

# Unit 2 Practice Questions - ALL

**238.** If the only two firms in an industry collude to charge a higher price and produce a lower quantity than what is socially optimal, what will happen to consumer surplus and total economic surplus in the market in the short run?

(A) Consumer surplus will decrease, and total economic surplus will stay the same.
(B) Consumer surplus will decrease, and total economic surplus will increase.
(C) Consumer surplus will increase, and total economic surplus will decrease.
(D) Consumer surplus and total economic surplus will both increase.
(E) Consumer surplus and total economic surplus will both decrease. ✓

**Answer E**

Correct. If the two firms charge a higher price and produce a lower quantity than what is socially optimal, consumers will pay a higher price for less output than they were consuming before, decreasing consumer surplus. Additionally, collusion will result in a lower quantity of output exchanged in the market as compared to equilibrium quantity exchanged in competitive markets, decreasing total economic surplus.

**239.** In the absence of market failures, a perfectly competitive market equilibrium is efficient for which of the following reasons?

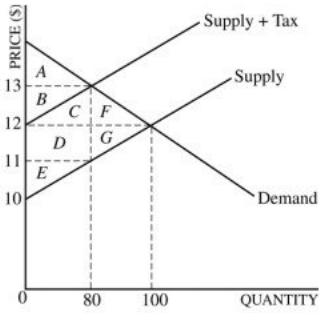
(A) Consumer surplus is maximized and consumers are better off relative to producers.
(B) Producer surplus is maximized and producers are better off relative to consumers.
(C) Total economic surplus is maximized and all mutually beneficial transactions are exhausted. ✓
(D) Total economic surplus is distributed equally between producers and consumers.
(E) The quantity of output is produced at a constant cost so that every consumer pays the same price.

**Answer C**

Correct. The competitive market in equilibrium is efficient because it maximizes the sum of consumer surplus and producer surplus. Perfectly competitive markets in equilibrium ensure that all mutually beneficial transactions are exhausted; that is, all opportunities to make some people better off without making other people worse off have been satisfied.

# Unit 2 Practice Questions - ALL

**240.**




The graph above shows the market for a good that is subject to a per-unit tax. The letters in the graph represent the enclosed areas.

a. Using the labeling on the graph, identify each of the following.

i. The equilibrium price and quantity before the tax

ii. The area representing the consumer surplus before the tax

iii. The area representing the producer surplus before the tax

b. Assume that the tax is now imposed. Based on the graph, does the price paid by the buyers rise by the full amount of the tax? Explain.

c. Using the labeling on the graph, identify each of the following after the imposition of the tax.

i. The net price received by the sellers

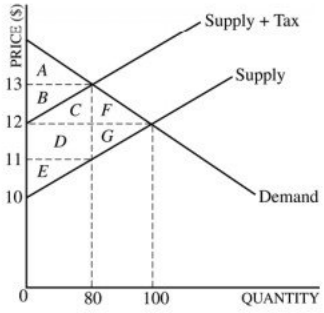
ii. The amount of tax revenue

iii. The area representing the consumer surplus

iv. The area representing the deadweight loss

Respond to all parts of the question.

**Part A**



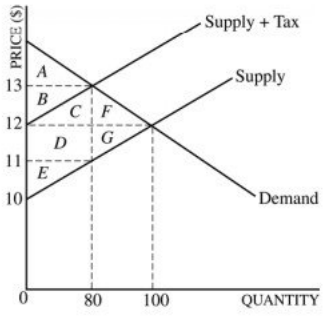

**3 Points**

- One point is earned for identifying P = $12 and Q = 100 units.
- One point is earned for identifying the consumer surplus before the tax, A + B + C + F.
- One point is earned for identifying the producer surplus before the tax, D + E + G or $100.

| 0 | 1 | 2 | 3 ✓ |
|---|---|---|---|

The student earns all of the following points:

# Unit 2 Practice Questions - ALL




- One point is earned for identifying P = $12 and Q = 100 units.
- One point is earned for identifying the consumer surplus before the tax, A + B + C + F.
- One point is earned for identifying the producer surplus before the tax, D + E + G or $100.

**Part B**

**2 Points**

- One point is earned for stating that the price paid by the buyers does not rise by the full amount of the tax.
- One point is earned for a correct explanation: P increases by $1 and the tax is 2$ per unit; or a correct elasticity explanation, such as S is not perfectly elastic, or D is not perfectly inelastic.

| 0 | 1 | 2 ✓ |
|---|---|---|

The student earns all of the following points:

- One point is earned for stating that the price paid by the buyers does not rise by the full amount of the tax.
- One point is earned for a correct explanation: P increases by $1 and the tax is 2$ per unit; or a correct elasticity explanation, such as S is not perfectly elastic, or D is not perfectly inelastic.

**Part C**

**4 Points**

- One point is earned for identifying the net price received by the sellers, $11.
- One point is earned for identifying the tax revenue, B + C + D or $160.
- One point is earned for identifying consumer surplus, A.
- One point is earned for identifying the deadweight loss, F + G or $20.

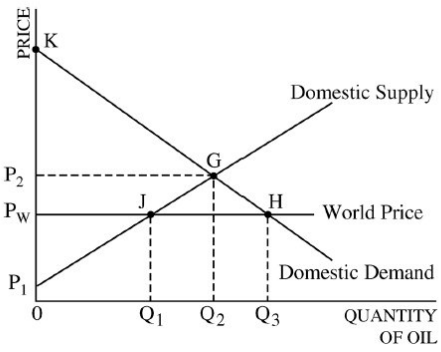
| 0 | 1 | 2 | 3 | 4 ✓ |
|---|---|---|---|---|

The student earns all of the following points:

- One point is earned for identifying the net price received by the sellers, $11.
- One point is earned for identifying the tax revenue, B + C + D or $160.
- One point is earned for identifying consumer surplus, A.
- One point is earned for identifying the deadweight loss, F + G or $20.

# Unit 2 Practice Questions - ALL

**241.**




The graph above shows the demand for oil by United States residents, the supply of oil by United States producers, and the world price of oil. Use the labeling of the graph to answer the following questions.

a. Identify the following before international trade occurs.

i. Price of oil in the United States market

ii. Quantity of oil produced in the United States

b. Now assume that the United States begins to import oil at the world market price of $P_W$. Identify the quantity imported by the United States.

c. Identify the consumer surplus in the United States market for each of the following cases.

i. Before international trade

ii. After international trade

d. Identify the producer surplus in the United States market for each of the following cases.

i. Before international trade

ii. After international trade

e. Identify the net gain in total surplus from trade.

Respond to all parts of the question.

**Part A**

As shown on the graph, P2 and Q2 were the price and quantity of oil before trade in the US market.

1 point - Identifying P2

1 point - Identifying Q2

| 0 | 1 | 2 ✓ |
|---|---|---|

Student receives 2/2 point(s)

1 point - Identifying P2

1 point - Identifying Q2

**Part B**

The amount of oil imported into the US market after trade would be equal to Q3-Q1. US production drops to Q1 but quantity demanded rises to Q3.

1 point: (Imports) Identifying (Q3 - Q1) or (H-J)

| 0 | 1 ✓ |
|---|---|

Student receives 1/1 point(s)

1 point: (Imports) Identifying (Q3 - Q1) or (H-J)

# Unit 2 Practice Questions - ALL

**Part C**

The triangle P2KG represents consumer surplus before trade, while triangle PWKH represents consumer surplus after trade.

1 point - Identifying P2KG (before)

1 point - Identifying PWKH (after)

| 0 | 1 | ✓ 2 |
|---|---|---|

Student receives 2/2 point(s)

1 point - Identifying P2KG (before)

1 point - Identifying PWKH (after)

**Part D**

The triangle P1P2G represents producer surplus before trade, while triangle P1PWJ represents producer surplus after trade.

1 point - Identifying P1P2G (before)

1 point - Identifying P1PWJ (after)

| 0 | 1 | ✓ 2 |
|---|---|---|

Student receives 2/2 point(s)

1 point - Identifying P1P2G (before)

1 point - Identifying P1PWJ (after)

**Part E**

The triangle JGH shows the net gain in total surplus from trade.

1 point: (Net gain in surplus) Identifying JGH

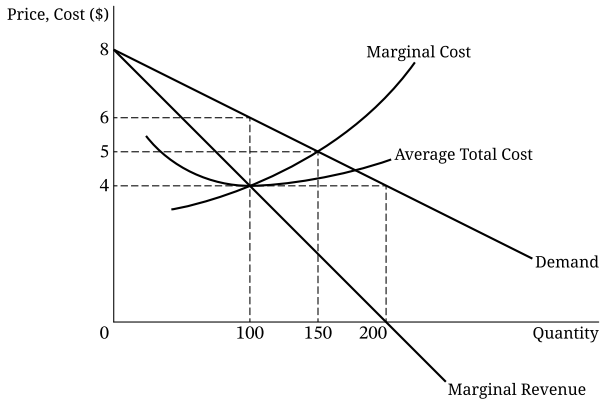
| 0 | ✓ 1 |
|---|---|

Student receives 1/1 point(s)

1 point: (Net gain in surplus) Identifying JGH

# Unit 2 Practice Questions - ALL

**242.** The graph shows the cost and revenue curves for Haye.




Haye is one of many firms that produce moisturizers in a market in which each firm slightly differentiates its product and there are no barriers to entry or exit.

**Part A**

Identify the market structure in which Haye is operating.

**Part B**

Identify Haye's profit-maximizing quantity and price.

**Part C**

Calculate the consumer surplus at the profit-maximizing quantity and price identified in part B. Show your work.

**Part D**

Is the profit-maximizing quantity identified in part B allocatively efficient? Explain using numbers.

**Part E**

What will happen to Haye's economic profit in the long run? Explain.

**Part A**

Select a point value to view scoring criteria or to score the response.

| 0 | 1 ✓ |
|---|---|

The response meets the criterion for this point.

*Criterion:*

- State that Haye operates in a monopolistically competitive market.

**Part B**

Select a point value to view scoring criteria or to score the response.

| 0 | 1 ✓ |
|---|---|

The response meets the criteria for this point.

*Criteria:*

- Identify Haye's profit-maximizing quantity as 100 units and price as $6.

# Unit 2 Practice Questions - ALL

**Part C**
Select a point value to view scoring criteria or to score the response.

| 0 | 1 ✓ |
|---|---|

The response meets the criteria for this point.

*Criteria:*

- Calculate the consumer surplus as $100 and show your work

$\text{Consumer Surplus} = \frac{1}{2} \times (\$8 - \$6) \times (100 - 0) = \frac{1}{2} \times \$2 \times 100 = \$100$

**Part D**
Select a point value to view scoring criteria or to score the response.

| 0 | 1 ✓ |
|---|---|

The response meets the criteria for this point.

*Criteria:*

- State no, the profit-maximizing quantity is not allocatively efficient and explain with ONE of the following:
  - The profit-maximizing quantity is 100, which is less than the allocatively efficient quantity of 150, resulting in deadweight loss.
  - The marginal benefit (price) of $6 is greater than the marginal cost of 4, resulting in deadweight loss.

**Part E**
Select a point value to view scoring criteria or to score the response.

| 0 | 1 ✓ |
|---|---|

The response meets the criteria for this point.

*Criteria:*

- State that Haye's economic profit in the long run will decrease to zero and explain that positive economic profit in the short run will encourage new firms to enter the market, producing substitutes and competing alternatives to Haye's product, which decreases the demand for Haye's product.

# Unit 2 Practice Questions - ALL

**243.** Include correctly labeled diagrams, if useful or required, in explaining your answers. A correctly labeled diagram must have all axes and curves clearly labeled and must show directional changes. If the question prompts you to "Calculate," you must show how you arrived at your final answer.

Heirloom Gardens is a typical profit-maximizing firm that produces and sells tomatoes in a constant-cost, perfectly competitive market that is in long-run equilibrium.

(a) Draw correctly labeled side-by-side graphs for the tomato market and for Heirloom Gardens and show each of the following.

(i) The market equilibrium price and quantity, labeled $P_M$ and $Q_M$, respectively

(ii) The profit-maximizing price and quantity for Heirloom Gardens, labeled $P_F$ and $Q_F$, respectively

(iii) The average total cost curve consistent with a long-run equilibrium, labeled ATC

(b) Suppose the government imposes a binding price floor in the market for tomatoes.

(i) Will this price floor benefit all tomato farmers? Explain.

(ii) Will consumer surplus increase, decrease, or stay the same? Explain.

(c) Suppose that the government does not impose the price floor referred to in part (b) and that there is now an increase in consumers' incomes and tomatoes are a normal good. On your graphs in part (a), show each of the following.

(i) The short-run effect of the increase in consumers' incomes on the market equilibrium price and quantity of tomatoes, labeled $P_2$ and $Q_2$, respectively

(ii) The short-run profit-maximizing quantity for Heirloom Gardens, labeled $Q^*$

(iii) The area representing Heirloom Gardens' economic profit, shaded completely

(d) Given the increase in consumers' incomes in part (c), what will happen to the market equilibrium price and quantity of tomatoes in the long run? Explain.

Respond to all parts of the question.

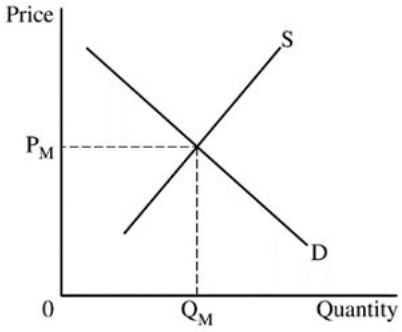
**Part A**

Select a point value to view scoring criteria, solutions, and/or examples and to score the response.

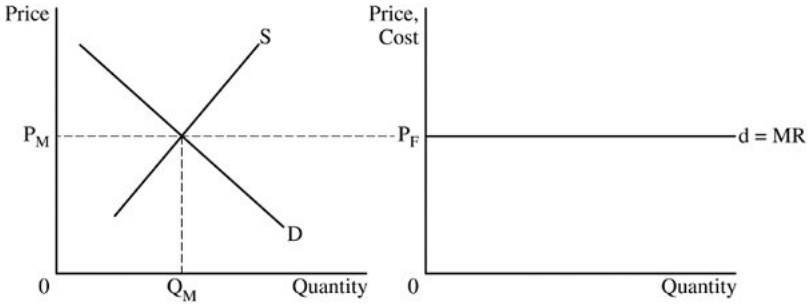
| 0 | 1 | 2 | 3 | 4 ✓ |
|---|---|---|---|---|

The response accurately includes four of the criteria below.

Draws a correctly labeled graph of the market for tomatoes with a downward-sloping demand (D) curve and an upward-sloping supply (S) curve and labels the market equilibrium price as $P_M$ and the market equilibrium quantity as $Q_M$.

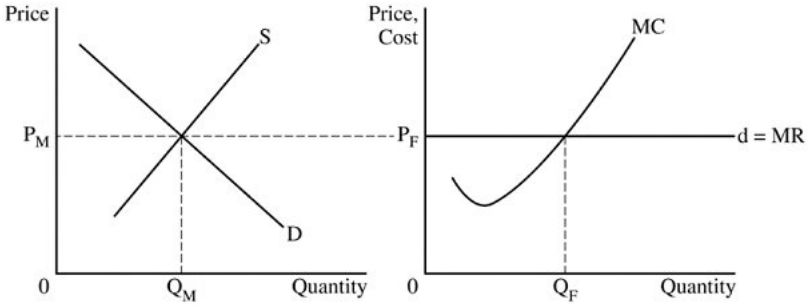



Shows the firm's horizontal demand and marginal revenue ($d = MR$) curve extended from the market equilibrium price ($P_M$), and labels the firm's price as $P_F$.

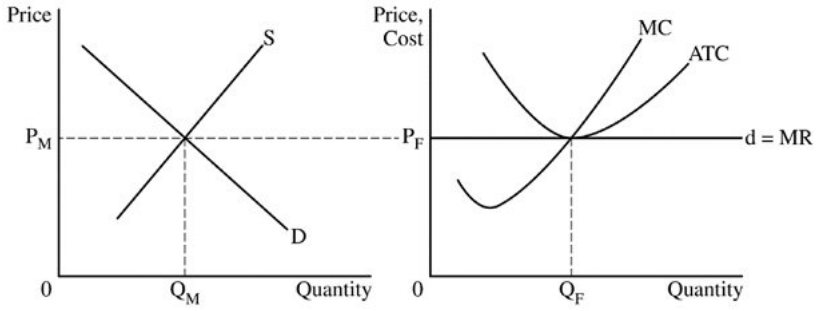



Shows a rising marginal cost (MC) curve and the profit-maximizing quantity, labeled $Q_F$ where $MR = MC$.

# Unit 2 Practice Questions - ALL




Shows the average total cost (ATC) curve tangent to the firm's demand curve at $Q_F$ and shows the MC curve passing through the minimum point of the ATC curve.




**Part B**

Select a point value to view scoring criteria, solutions, and/or examples and to score the response.

| 0 | 1 | 2 ✓ |
|---|---|---|

The response accurately includes two of the criteria below.

- States no and explains that the binding price floor will create a market surplus, and some tomato farmers will not be able to sell their tomatoes at the price floor.
- States that consumer surplus will decrease and explains that the binding price floor increases the price paid by consumers, which decreases the quantity demanded.

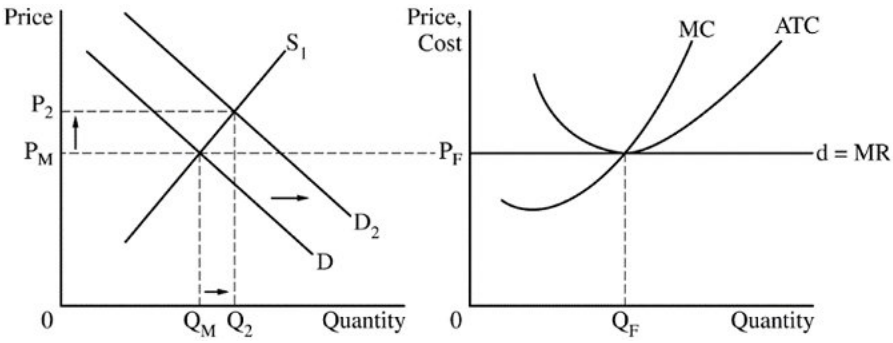
**Part C**

Select a point value to view scoring criteria, solutions, and/or examples and to score the response.

| 0 | 1 | 2 | 3 ✓ |
|---|---|---|---|

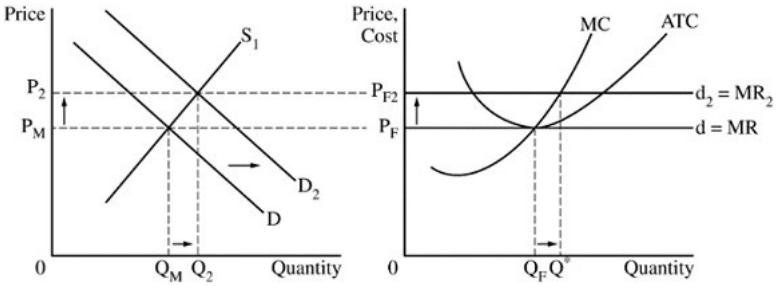
The response accurately includes three of the criteria below.

- On the market graph from part (a), shows a rightward shift of the market demand curve and the new equilibrium price and quantity, labeled $P_2$ and $Q_2$, respectively.

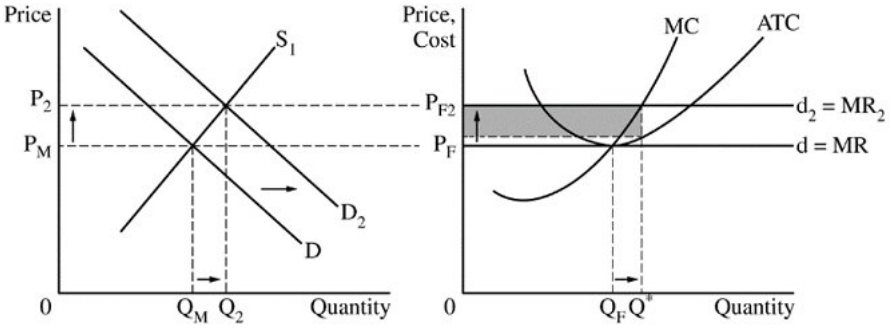


# Unit 2 Practice Questions - ALL

Shows an upward shift in the firm's demand curve and the new profit-maximizing quantity for Heirloom Gardens, labeled Q*.




Shows a completely shaded area of Heirloom Gardens' short-run economic profit.




**Part D**

Select a point value to view scoring criteria, solutions, and/or examples and to score the response.

| 0 | 1 ✓ |
|---|---|

The response accurately includes the criterion below.

- States that the market price of tomatoes will decrease to $P_M$ and the market quantity of tomatoes will increase and explains that short-run positive economic profits will lead to the entry of new firms, which shifts the market supply curve to the right.

# Unit 2 Practice Questions - ALL

**244. Include correctly labeled diagrams, if useful or required, in explaining your answers. A correctly labeled diagram must have all axes and curves clearly labeled and must show directional changes. If the question prompts you to "Calculate," you must show how you arrived at your final answer.**

Assume that Grainland currently produces wheat and does not trade wheat in international markets.

(a) Draw a correctly labeled demand and supply graph for the domestic wheat market in Grainland. Label the equilibrium price, $P_e$, and the equilibrium quantity, $Q_e$.

(b) Suppose the price of wheat in the world market is lower than the domestic price of wheat in Grainland. Assume now Grainland wants to trade wheat in the world market.

(i) On your graph from part (a), label the world market price of wheat as $P_W$, and identify the domestic quantity demanded of wheat at $P_W$, as $Q_3$, and the domestic quantity supplied of wheat labeled as $Q_1$.

(ii) Will Grainland export or import wheat? Explain.

(c) With international trade in wheat, who will benefit in Grainland: domestic producers, domestic consumers, neither or both? Explain.

(d) Suppose that the government of Grainland decides to provide a subsidy for wheat farmers to make the country more competitive and sell wheat at the world market price so that all wheat is produced domestically. Show the effect of the subsidy on your graph in part (a).

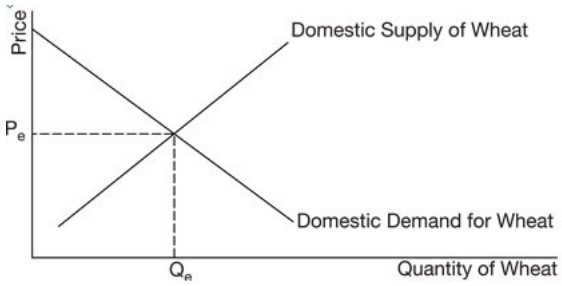
Respond to all parts of the question.

**Part (a)**

Select a point value to view scoring criteria, solutions, and/or examples and to score the response.

| 0 | 1 ✓ |
|---|---|

The response provides a correctly labeled graph of the domestic market for wheat showing the equilibrium price, labeled $P_e$ and and the equilibrium quantity, labeled $Q_e$




**Part (b)**

Select a point value to view scoring criteria, solutions, and/or examples and to score the response.

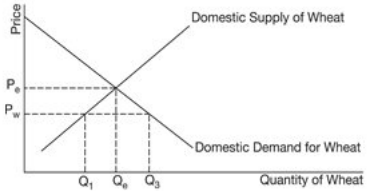
The two criteria in part B are achieved independently.

| 0 | 1 | 2 ✓ |
|---|---|---|

The response accurately includes both of the criteria below.

- ☐ Shows on the graph in part (b) the world price of wheat below the market equilibrium price, labeled as $P_w$ the domestic quantity demanded of wheat at $P_w$ labeled as $Q_3$ and the domestic quantity supplied of wheat, labeled as $Q_1$
- ☐ States that Grainland will import wheat and explains that the domestic equilibrium price is greater than the world price, incentivizing domestic buyers to buy their wheat on the world market, OR Grainland does not have a comparative advantage in wheat production because the domestic equilibrium price of wheat is greater than the world price of wheat.

Required graph:



# Unit 2 Practice Questions - ALL

**Part (c)**

Select a point value to view scoring criteria, solutions, and/or examples and to score the response.

| 0 | 1 ✓ |
|---|---|

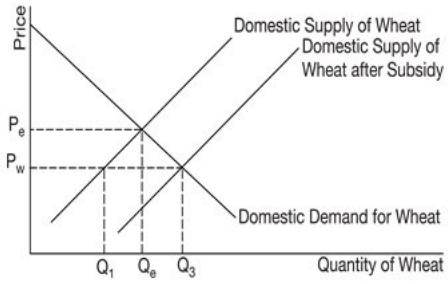
The response states that domestic consumers of wheat in Grainland will benefit because with trade the price of wheat will fall down to the world price, increasing the total consumer surplus. [Note that domestic producers will not benefit because they will be producing less wheat as a result of the lower price.]

**Part (d)**

Select a point value to view scoring criteria, solutions, and/or examples and to score the response.

| 0 | 1 ✓ |
|---|---|

The response shows a rightward shift of the supply curve on the graph in part (d) sufficient enough to eliminate imports of wheat (which means that the new supply curve should intersect the demand curve at $Q_3$ and $P_w$ ) as shown in the graph below.




**245.**

| | Jill's Demand | All other consumers' Demand | Market Supply |
|---|---|---|---|
| Price | Quantity | Quantity | Quantity |
| $8 | 140 | 5,200 | 5,750 |
| $7 | 150 | 5,400 | 5,550 |
| $6 | 160 | 5,600 | 5,350 |
| $5 | 170 | 5,800 | 5,150 |
| $4 | 180 | 6,000 | 4,950 |

The table above shows the demand schedules for Jill and for all other consumers, as well as the market supply schedule for the same good. The equilibrium price in this market is

(A) $8

(B) $7 ✓

(C) $6

(D) $5

(E) $4

# Unit 2 Practice Questions - ALL

**246.** ***Include correctly labeled diagrams, if useful or required, in explaining your answers. A correctly labeled diagram must have all axes and curves clearly labeled and must show directional changes. If the question prompts you to "Calculate," you must show how you arrived at your final answer.***

*The table below shows the marg*inal benefit, in dollars, that Kareem derives from consuming two goods, Good X and cereal.

| Quantity of Good X | Marginal Benefit of Good X | Quantity of Cereal | Marginal Benefit of Cereal |
|---|---|---|---|
| 1 | $18 | 1 | $32 |
| 2 | $16 | 2 | $28 |
| 3 | $12 | 3 | $24 |
| 4 | $6 | 4 | $20 |
| 5 | $2 | 5 | $16 |
| 6 | $0 | 6 | $12 |

Kareem has a limited weekly income of $18, and he spends it all on Good X and cereal. Assume the price of Good X is 2 per unit and the price of cereal is $4 per unit.

(a) Given his weekly income, would Kareem be able to buy 3 units of Good X and 5 units of cereal? Explain using numbers.

(b) Calculate the total consumer surplus from Good X if Kareem consumes 4 units of Good X. Show your work.

(c) Identify the quantity of Good X and the quantity of cereal that will maximize Kareem's total benefit given his weekly income. Explain using marginal analysis.

(d) Assume Good X is produced in a perfectly competitive market and that there is a decrease in the number of consumers in the market for Good X.
(i) Will the quantity of Good X that will maximize Kareem's total benefit increase, decrease, or stay the same? Explain.
(ii) Would Kareem's total consumer surplus from Good X if he consumes 4 units of Good X increase, decrease, or stay the same compared to your answer in part (b) ? Explain.

Respond to all parts of the question.

**Part A**

Select a point value to view scoring criteria, solutions, and/or examples and to score the response.

| 0 | 1 ✓ |
|---|---|

The response states that no, Kareem would not be able to buy 3 units of Good X and 5 units of cereal and explains that his total expenditures would be $26 $(= \$2 \times 3 + \$4 \times 5)$, which is greater than his weekly income of $18.

**Part B**

Select a point value to view scoring criteria, solutions, and/or examples and to score the response.

| 0 | 1 ✓ |
|---|---|

The response calculates the total consumer surplus as $44 and shows the work.

$\text{Total Consumer Surplus} = \text{Total Benefit} - \text{Total Expenditures} = \$52 - \$8 = \$44$

**Part C**

Select a point value to view scoring criteria, solutions, and/or examples and to score the response.

| 0 | 1 ✓ |
|---|---|

The response identifies 3 units of Good X and 3 units of cereal will maximize Kareem's total benefit given his weekly income of $18 and explains that for the last unit of each good consumed the ratio of the marginal benefit to the price of Good X (6) is equal to the ratio of the marginal benefit to the price of cereal (6), or

$$\frac{MB_{Good\ X}}{Price_{Good\ X}} = \frac{MB_{Cereal}}{Price_{Cereal}}$$

$$\frac{\$12}{\$2} = \frac{\$24}{\$4}$$

$$6 = 6$$

# Unit 2 Practice Questions - ALL

**Part D**

Select a point value to view scoring criteria, solutions, and/or examples and to score the response.

| 0 | 1 | 2 ✓ |
|---|---|---|

The response does both of the following:

· States that the quantity of Good X that will maximize Kareem's total benefit will increase and explains that a decrease in the number of consumers in the market for Good X will decrease the demand for Good X, which will decrease the price of Good X and increase the marginal benefit per dollar spent that Kareem gets from each additional unit of the good.

· States that Kareem's total consumer surplus would increase and explains that a decrease in the price of Good X would decrease the total cost of consuming 4 units of Good X while the total benefit of consuming 4 units of cereal remains the same.

**247.** The table shows the market price, quantity of a good exchanged, and the resulting deadweight loss in five different market structures.

| Market | Price ($) | Quantity Exchanged (units) | Deadweight Loss ($) |
|---|---|---|---|
| **1** | 25 | 100 | 50 |
| **2** | 30 | 750 | 300 |
| **3** | 45 | 500 | 100 |
| **4** | 50 | 300 | 0 |
| **5** | 60 | 20 | 200 |

Which market displays outcomes that are consistent with those that result under perfect competition?

(A) Market 1
(B) Market 2
(C) Market 3
(D) Market 4 ✓
(E) Market 5

**Answer D**

Correct. In a perfectly competitive market, the equilibrium outcome results in the price of a good that equals both the marginal private benefit received by the last unit consumed and the marginal private cost incurred to produce the last unit. As a result, the allocatively efficient quantity of the good is produced, and there is no deadweight loss.

# Unit 2 Practice Questions - ALL

**248.** The market for Good Z has relatively elastic supply and demand curves. Market efficiency is attained when

(A) total labor cost is minimized for each firm
(B) each firm experiences economies of scale
(C) consumer surplus is greater than producer surplus
(D) producer surplus is zero
(E) deadweight loss is zero ✓

**Answer E**

Correct. Market efficiency is attained when total economic surplus is maximized and thus deadweight loss is zero, that is, the price and quantity at which supply equals demand in a free-market equilibrium.

# Unit 2 Practice Questions - ALL

**249.** The market for apartments in the town of Westville is currently in equilibrium, and consumers are renting 700 apartments at a price of $1,000 per apartment.

a. Assuming that the supply of apartments is perfectly inelastic, draw a correctly labeled graph for the apartment market and label the equilibrium price and quantity using the values above.

b. Now assume the government imposes a price (rent) ceiling of $800 for an apartment. On your graph in part (a), show the following.

i. The price ceiling at $800

ii. The quantity demanded, labeled as $Q_d$

iii. The quantity supplied, labeled as $Q_s$

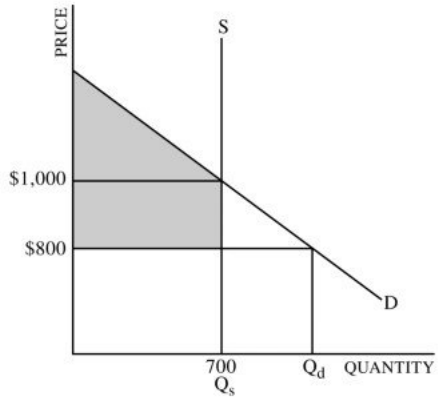
c. On your graph, shade completely the area representing the consumer surplus after the imposition of the price ceiling.

d. Calculate the dollar value of the producer surplus after the imposition of the price ceiling. Show your work.

e. Explain why the imposition of the price ceiling does not result in a deadweight loss.

Respond to all parts of the question.

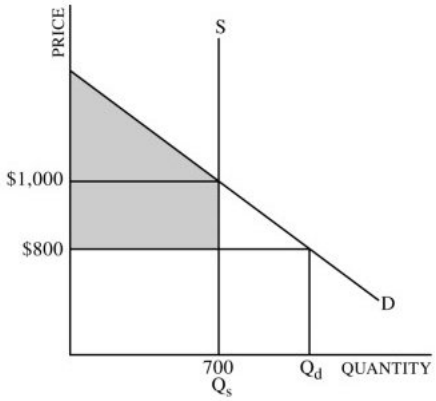
**Part A**




One point is earned for drawing a graph with correctly labeled axes, supply, demand, and identifying equilibrium price and quantity as $1000 and 700.

| 0 | 1 ✓ |
|---|---|

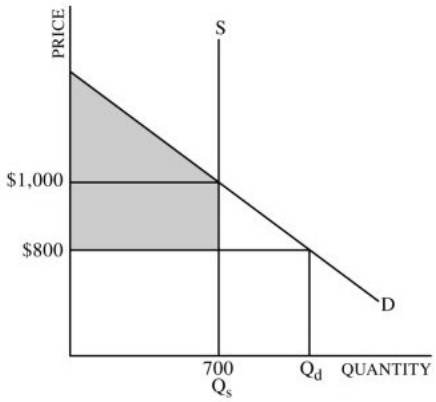
The student earns all of the following points:




One point is earned for drawing a graph with correctly labeled axes, supply, demand, and identifying equilibrium price and quantity as $1000 and 700.

**Part B**

# Unit 2 Practice Questions - ALL

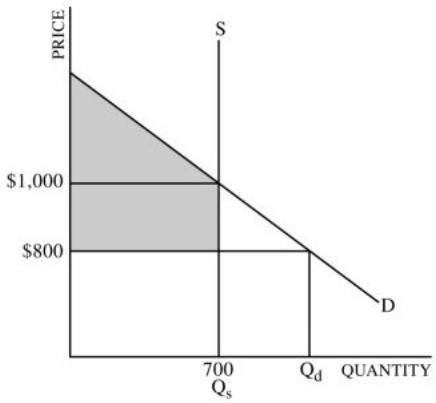



**3 Points**

- One point is earned for showing the price ceiling of 800*below*1000.
- One point is earned for showing Qd derived from the demand curve at $800.
- One point is earned for showing Qs derived from the supply curve at $800.

| 0 | 1 | 2 | 3 ✓ |
|---|---|---|---|

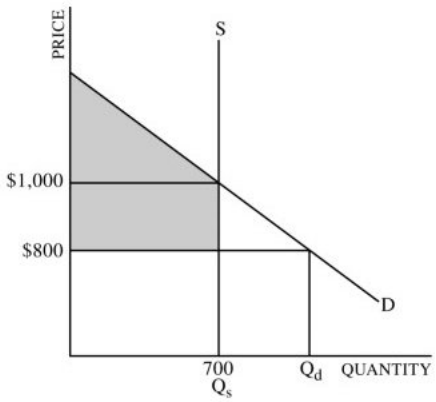
The student earns all of the following points:




- One point is earned for showing the price ceiling of 800*below*1000.
- One point is earned for showing Qd derived from the demand curve at $800.
- One point is earned for showing Qs derived from the supply curve at $800.

**Part C**

# Unit 2 Practice Questions - ALL

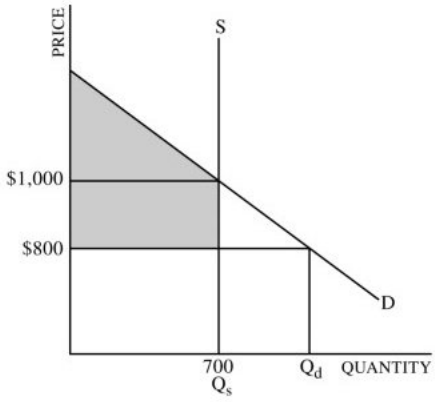



One point is earned for showing the area representing the consumer surplus shaded completely.

Note: If the supply curve from part (a) is not perfectly inelastic, no points can be awarded in parts (d) and (e).

| 0 | 1 ✓ |
|---|---|

The student earns all of the following points:




One point is earned for showing the area representing the consumer surplus shaded completely.

**Part D**

One point is earned for calculating the producer surplus: $800 \times 700 = 560{,}000$.

| 0 | 1 ✓ |
|---|---|

The student earns all of the following points:

- One point is earned for calculating the producer surplus: $800 \times 700 = 560{,}000$.

**Part E**

One point is earned for the explanation that the quantity supplied does not change after the imposition of the price ceiling.

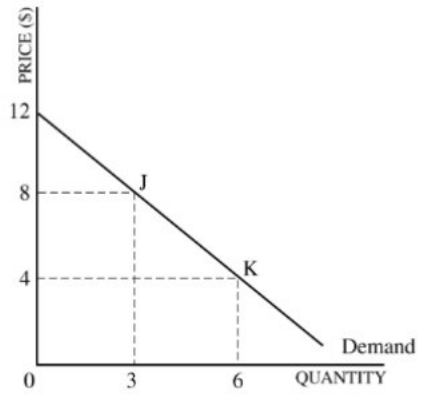
| 0 | 1 ✓ |
|---|---|

The student earns all of the following points:

# Unit 2 Practice Questions - ALL

- One point is earned for the explanation that the quantity supplied does not change after the imposition of the price ceiling.

**250.**

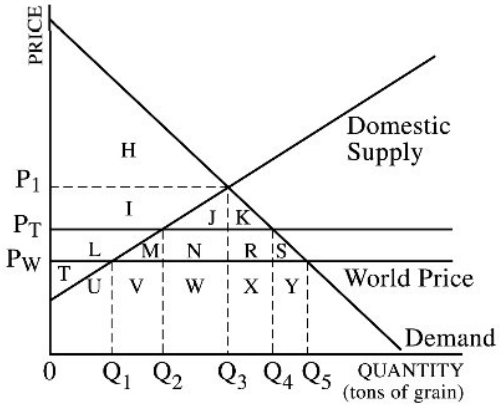



Given the demand curve, if price decreases from $8 to $4 per unit, total consumer surplus will

(A) increase by $4
(B) increase by $8
(C) increase by $12
(D) increase by $18 ✓
(E) remain constant at $24

# Unit 2 Practice Questions - ALL

**251.**




The diagram above illustrates the domestic market for grain in Country X before and after international trade. The letters inside the diagram represent areas, not points.

a. Using the labeling of the graph, identify each of the following before any trade occurs.

i. Equilibrium price and quantity

ii. Area of consumer surplus

iii. Area of producer surplus

b. Using the labeling of the graph, identify the amount of grain that Country X will import if it engages in trade and the world price of grain is at PW.

c. Now assume that Country X imposes a tariff that raises the price of grain from the free-trade case to PT. Using the labeling of the graph, identify the change in each of the following.

i. Domestic production

ii. Domestic consumption

iii. Consumer surplus

iv. Producer surplus

Respond to all parts of the question.

**Part A**

(a) Before trade, the relevant curves are the domestic supply curve and the demand curve. The intersection of domestic supply and demand determines the equilibrium price and quantity, P1 and Q3. Consumer surplus is area H, above the price line and below the demand curve. Producer surplus is area I + L + T, above the domestic supply curve and below the price line.

1 point - for identifying Q3 and P1

1 point - for identifying H

1 point - for identifying I+L+T

| 0 | 1 | 2 | 3 ✓ |
|---|---|---|---|

Student receives 3/3 point(s)

(a) Before trade, the relevant curves are the domestic supply curve and the demand curve. The intersection of domestic supply and demand determines the equilibrium price and quantity, P1 and Q1. Consumer surplus is area H, above the price line and below the demand curve. Producer surplus is area I + L + T, above the domestic supply curve and below the price line.

1 point - for identifying Q3 and P1

1 point - for identifying H

1 point - for identifying I+L+T

**Part b**

# Unit 2 Practice Questions - ALL

(b) With free trade and a world price of PW, domestic suppliers are unable to charge more than PW because consumers can purchase all that they want at the world price. At PW, domestic suppliers are willing to supply quantity Q1 and demanders will purchase quantity Q5. The difference between these quantities, Q5 – Q1, will be imported by Country X.

1 point - for identifying Q5-Q1

| 0 | 1 ✓ |
|---|---|

Student receives 1/1 point(s)

1 point - for identifying Q5-Q1

**Part C**

(c) At the post-tariff price PT, the domestic supply curve indicates that domestic suppliers will produce the quantity Q2 rather than Q1, so the change is Q2 – Q1. The demand curve indicates that domestic consumers will demand the quantity Q4 rather than Q5, so the change is Q4 – Q5. Consumer surplus shrinks from (H+I+J+K+L+M+N+R+S) to (H+I+J+K), a loss of (L+M+N+R+S). Producer surplus increases from T to T+L, a gain of L.

1 for identifying Q2-Q1; *Q2 is acceptable if part (b) is correct.*

1 for identifying Q4-Q5; *Q4 is acceptable if part (b) is correct.*

1 for identifying the loss: L+M+N+R+S; (*retain H+I+J+K not acceptable—must identify the CHANGE).*

1 for identifying the gain: L; (*T + L not acceptable—must identify the CHANGE).*

| 0 | 1 | 2 | 3 | 4 ✓ |
|---|---|---|---|---|

Student receives 4/4 point(s)

1 for identifying Q2-Q1; *Q2 is acceptable if part (b) is correct.*

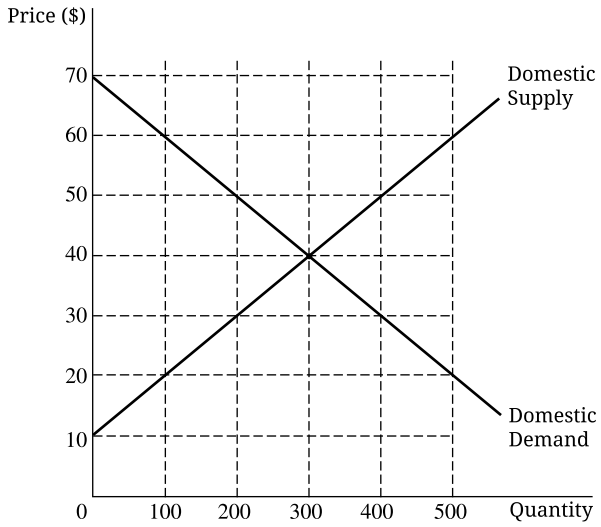
1 for identifying Q4-Q5; *Q4 is acceptable if part (b) is correct.*

1 for identifying the loss: L+M+N+R+S; (*retain H+I+J+K not acceptable—must identify the CHANGE).*

1 for identifying the gain: L; (*T + L not acceptable—must identify the CHANGE).*

# Unit 2 Practice Questions - ALL

**252.** Include correctly labeled diagrams, if useful or required, in explaining your answers. A correctly labeled diagram must have all axes and curves clearly labeled and must show directional changes. If the question prompts you to "Calculate," you must show how you arrived at your final answer.




The graph provided depicts New Zealand's domestic supply and demand for wool.

(a) Calculate the consumer surplus if New Zealand does not trade with the rest of the world. Show your work.

(b) Instead, assume New Zealand decides to trade wool in the world market. The current world price of wool is $60 per unit, and New Zealand is a price taker in the world market.

(i) How many units of wool will New Zealand export?
(ii) What will happen to the consumer surplus of wool consumers in New Zealand when New Zealand begins to trade with the rest of the world? Explain.
(iii) Will total economic surplus in New Zealand increase, decrease, or remain unchanged when New Zealand begins to trade wool in the world market? Explain using numbers.

(c) Now assume domestic demand in New Zealand increases. Will New Zealand's exports increase, decrease, or stay the same?

Respond to all parts of the question.

**Part A**

Select a point value to view scoring criteria, solutions, and/or examples and to score the response.

The response must show appropriate work in order to receive the point.

| 0 | 1 ✓ |
|---|---|

The response accurately includes the criterion below.

- ☐ Consumer Surplus $= \frac{1}{2} \times 300 \times (\$70 - \$40) = \frac{1}{2} \times 300 \times \$30 = \frac{\$9{,}000}{2} = \$4,500$

**Part B**

Select a point value to view scoring criteria, solutions, and/or examples and to score the response.

| 0 | 1 | 2 | 3 ✓ |
|---|---|---|---|

The response accurately includes three of the criteria below.

- ☐ On that New Zealand will export 400 units of wool.
- ☐ States that consumer surplus in New Zealand will decrease and explains with **ONE** of the following.
  · The domestic price will increase to the world price, which decreases the domestic quantity demanded of wool.
  · The consumer surplus decreased from $4,500 before trade to 500 after trade.
- ☐ States that total economic surplus in New Zealand will increase by $4,000 and explains that producer surplus will increase by $8,000 while consumer surplus will decrease by $4,000, resulting in an increase in total economic surplus.

# Unit 2 Practice Questions - ALL

**Part C**

Select a point value to view scoring criteria, solutions, and/or examples and to score the response.

| 0 | 1 ✓ |
|---|---|

The response accurately includes the criterion below

- [ ] States that New Zealand's exports will decrease.

# Unit 2 Practice Questions - ALL

**253. Include correctly labeled diagrams, if useful or required, in explaining your answers. A correctly labeled diagram must have all axes and curves clearly labeled and must show directional changes. If the question prompts you to "Calculate," you must show how you arrived at your final answer.**

The table below shows the marginal benefit, in dollars, that Patrick derives from consuming two goods, apples and Good B.

| Quantity of Apples | Marginal Benefit of Apples | Quantity of Good B | Marginal Benefit of Good B |
|---|---|---|---|
| 1 | $14 | 1 | $36 |
| 2 | $6 | 2 | $28 |
| 3 | $4 | 3 | $20 |
| 4 | $3 | 4 | $12 |
| 5 | $1 | 5 | $2 |
| 6 | $0 | 6 | $0 |

Patrick has a limited weekly income of $30, and he spends it all on apples and Good B. Assume the price of each apple is $2 and the price of Good B is $4 per unit.

(a) Calculate the total consumer surplus from Good B if Patrick consumes 2 units of Good B. Show your work.

(b) Given his weekly income, would Patrick be able to buy 2 apples and 3 units of Good B? Explain using numbers.

(c) Identify the quantity of apples and the quantity of Good B that will maximize Patrick's total benefit given his weekly income. Explain using marginal analysis.

(d) Assume Good B is produced in a perfectly competitive market and that there is a decrease in the number of consumers in the market for Good B.
(i) Would Patrick's total consumer surplus from Good B if he consumes 2 units of Good B increase, decrease, or stay the same compared to your answer in part (a) ? Explain.
(ii) Will the quantity of Good B that will maximize Patrick's total benefit increase, decrease, or stay the same? Explain.

Respond to all parts of the question.

**Part A**

Select a point value to view scoring criteria, solutions, and/or examples and to score the response.

| 0 | 1 ✓ |
|---|---|

The response calculates the total consumer surplus as $56 and shows the work.

$$\text{Total Consumer Surplus} = \text{Total Benefit} - \text{Total Expenditures} = \$64 - \$8 = \$56$$

**Part B**

Select a point value to view scoring criteria, solutions, and/or examples and to score the response.

| 0 | 1 ✓ |
|---|---|

The response states that yes, Patrick would be able to buy 2 apples and 3 units of Good B and explains that his total expenditures would be $16 $(= \$2 \times 2 \times \$4 \times 3)$, which is less than his weekly income of $30 .

**Part C**

Select a point value to view scoring criteria, solutions, and/or examples and to score the response.

| 0 | 1 ✓ |
|---|---|

The response identifies that 5 apples and 5 units of Good B will maximize Patrick's total benefit given his weekly income of $30 and explains that for the last unit of each good consumed the ratio of the marginal benefit to the price of apples (0.5) is equal to the ratio of the marginal benefit to the price of Good B (0.5), or

$$\frac{MB_{Apples}}{Price_{Apples}} > \frac{MB_{Good\ B}}{Price_{Good\ B}}$$

$$\frac{\$1}{\$2} = \frac{\$2}{\$4}$$

$$0.5 = 0.5$$

**Part D**

# Unit 2 Practice Questions - ALL

Select a point value to view scoring criteria, solutions, and/or examples and to score the response.

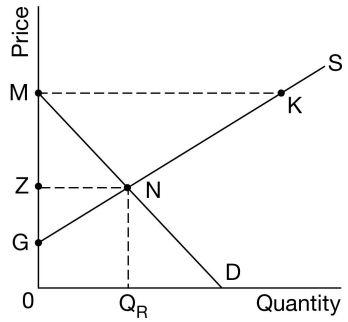
| 0 | 1 | 2 ✓ |
|---|---|---|

The response does both of the following:

· States that Patrick's total consumer surplus would increase and explains that a decrease in the number of consumers in the market for Good B would decrease the demand for Good B, which would decrease the price of Good B, and a decrease in the price of Good B would decrease the total cost of consuming 2 units of Good B while the total benefit of consuming 2 units of Good B remains the same.

· States that the quantity of Good B that will maximize Patrick's total benefit will increase and explains that there has been a decrease in the price of Good B and an increase in the marginal benefit per dollar spent that Patrick gets from each additional unit of the good.

**254.**




Based on the graph above, the producer surplus at the market equilibrium price and quantity is shown by which area?

(A) GMK
(B) GMN
(C) GZN ✓
(D) ZMN
(E) MNK

**Answer C**

Correct. Producer surplus is the difference between the minimum price for which producers are willing to sell a product (as depicted by the supply curve) and the actual price they do receive. At equilibrium, the producer surplus is measured by the area of the triangle above the supply curve but below the equilibrium price for the quantities between zero and equilibrium quantity, GZN.

**255.** Kareem is willing to pay $25 for a new remote control produced by Remotek in a perfectly competitive market. Which of the following is true if the market price of the remote control is 10?

(A) Kareem's consumer surplus is $10.
(B) Kareem's consumer surplus is $15. ✓
(C) Kareem's consumer surplus is $25.
(D) Remotek's producer surplus is $25.
(E) Remotek's producer surplus is $35.

**Answer B**

Correct. Consumer surplus represents the difference between what a consumer is willing to pay for a good and the market price that the consumer must pay for the good. In this example, Kareem is willing to pay $25 for a remote control but only has to pay 10, so Kareem receives 15 (=25 − $10) in consumer surplus.

# Unit 2 Practice Questions - ALL

**256.** ***Include correctly labeled diagrams, if useful or required, in explaining your answers. A correctly labeled diagram must have all axes and curves clearly labeled and must show directional changes. If the question prompts you to "Calculate," you must show how you arrived at your final answer.***

*The table below shows the marginal benefit, in dollars, that Sam derives from consuming two goods, Good C and candles.*

| *Quantity of Good C* | *Marginal Benefit of Good C* | *Quantity of Candles* | *Marginal Benefit of Candles* |
|---|---|---|---|
| *1* | *$20* | 1 | $30 |
| 2 | $16 | 2 | $27 |
| 3 | $12 | 3 | $24 |
| 4 | $8 | 4 | $21 |
| 5 | $6 | 5 | $18 |
| 6 | $4 | 6 | $12 |

Sam has a limited weekly income of $21, and he spends it all on Good C and candles. Assume the price of Good C is $2 per unit and the price of each candle is $3.

(a) Given his weekly income, would Sam be able to buy 3 units of Good C and 3 candles? Explain using numbers.

(b) Calculate the total consumer surplus from Good C if Sam consumes 6 units of Good C. Show your work.

(c) Identify the quantity of Good C and the quantity of candles that will maximize Sam's total benefit given his weekly income. Explain using marginal analysis.

(d) Assume Good C is produced in a perfectly competitive market and that there is a decrease in the number of consumers in the market for Good C.
(i) Will the quantity of Good C that will maximize Sam's total benefit increase, decrease, or stay the same? Explain.
(ii) Would Sam's total consumer surplus from Good C if he consumes 6 units of Good C increase, decrease, or stay the same compared to your answer in part (b) ? Explain.

Respond to all parts of the question.

**Part A**

Select a point value to view scoring criteria, solutions, and/or examples and to score the response.

| 0 | 1 ✓ |
|---|---|

The response states that yes, Sam would be able to buy 3 units of Good C and 3 candles and explains that his total expenditures would be $15 ($= \$2 \times 3 + \$3 \times 3$), which is less than his weekly income of $21.

**Part B**

Select a point value to view scoring criteria, solutions, and/or examples and to score the response.

| 0 | 1 ✓ |
|---|---|

The response calculates the total consumer surplus as $54 and shows the work.

Total Consumer Surplus = Total Benefit – Total Expenditures
$= \$66 - \$12 = \$54$

**Part C**

Select a point value to view scoring criteria, solutions, and/or examples and to score the response.

| 0 | 1 ✓ |
|---|---|

The response identifies that 3 units of Good C and 5 candles will maximize Sam's total benefit given his weekly income of $21 and explains that for the last unit of each good consumed the ratio of the marginal benefit to the price of Good C (6) is equal to the ratio of the marginal benefit to the price of candles (6), or

$$\frac{MB_{Good\ C}}{Price_{Good\ C}} = \frac{MB_{Candles}}{Price_{Candles}}$$

$$\frac{\$12}{\$2} = \frac{\$18}{\$3}$$

$6 = 6$

# Unit 2 Practice Questions - ALL

**Part D**

Select a point value to view scoring criteria, solutions, and/or examples and to score the response.

| 0 | 1 | 2 ✓ |
|---|---|---|

The response does both of the following:

· States that the quantity of Good C that will maximize Sam's total benefit will increase and explains that a decrease in the number of consumers in the market for Good C will decrease the demand for Good C, which will decrease the price of Good C and increase the marginal benefit per dollar spent that Sam gets from each additional unit of the good.

· States that Sam's total consumer surplus would increase and explains that a decrease in the price of Good C would decrease the total cost of consuming 6 units of Good C while the total benefit of consuming 6 units of candles remains the same.

# Unit 2 Practice Questions - ALL

**257. Include correctly labeled diagrams, if useful or required, in explaining your answers. A correctly labeled diagram must have all axes and curves clearly labeled and must show directional changes. If the question prompts you to "Calculate," you must show how you arrived at your final answer.**

In the small country of Anconia, shoes are produced in a perfectly competitive industry. The equilibrium market price for shoes is $50 per pair. Anconia does not currently trade with other countries.

(a) Draw a correctly labeled graph of the shoe market in Anconia and indicate the following.

(i) The equilibrium price in Anconia, labeled $50
(ii) The equilibrium quantity in Anconia, labeled $Q_F$

(b) Now assume that Anconia opens its shoe market to international trade and starts trading shoes with other countries at the world price of $30 per pair.

(i) On your graph in part (a), show each of the following for the shoe market in Anconia.
- The world price of shoes, labeled $30
- The quantity of shoes supplied by producers in Anconia, labeled $Q_P$
- The total quantity of shoes purchased by domestic consumers in Anconia, labeled $Q_C$

(ii) Using labels from your graph, identify the quantity of shoes imported by Anconia.
(iii) Did consumers of shoes in Anconia benefit from opening up the shoe market to trade? Explain.
(iv) On your graph in part (a), show the domestic producer surplus in Anconia with trade, shaded completely.

(c) Now assume that the government of Anconia places a tariff on imported shoes. Relative to the free-trade outcomes in part (b), identify whether the following would increase, decrease, or remain the same as a result of the implementation of the tariff.

(i) The price of shoes in Anconia
(ii) The producer surplus of domestic shoe producers in Anconia

(d) Explain why a government might prefer to impose a tariff rather than an import quota.

Respond to all parts of the question:

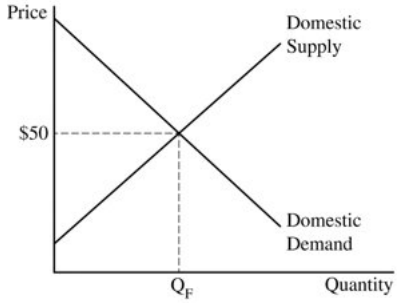
**Part A**

Select a point value to view scoring criteria, solutions, and/or examples and to score the response.

| 0 | 1 ✓ |
|---|---|

The response accurately includes the criterion below.

Draws a correctly labeled graph of the market for shoes in Anconia, with the equilibrium price labeled $50, and the equilibrium quantity labeled $Q_F$.




**Part B**

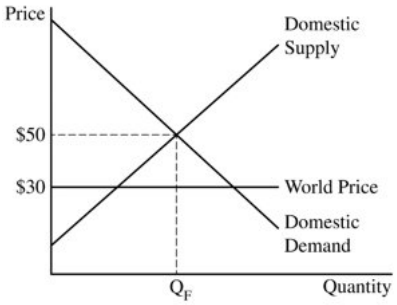
Select a point value to view scoring criteria, solutions, and/or examples and to score the response.

| 0 | 1 | 2 | 3 | 4 | 5 | 6 ✓ |
|---|---|---|---|---|---|---|

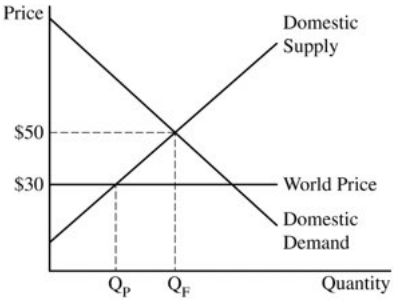
The response accurately includes six of the criteria below.

On the graph in part (a), shows the world price for shoes, labeled $30.

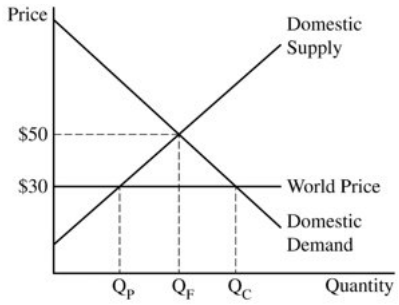
# Unit 2 Practice Questions - ALL




On the graph in part (a), shows the quantity of shoes supplied by domestic producers in Anconia, labeled $Q_P$.



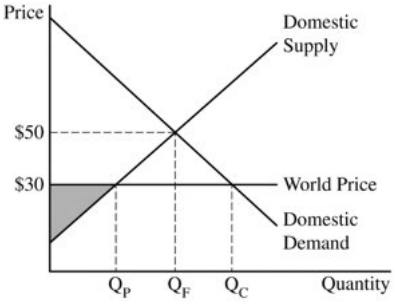

On the graph in part (a), shows the total quantity of shoes purchased by domestic consumers in Anconia, labeled $Q_C$.




State that the quantity of shoes imported by Anconia is $Q_C - Q_P$.

State that yes, consumers of Anconia benefit from opening up the shoe market to trade and explains that the consumers will be able to buy more shoes at the lower world price.

On the graph in part (a), shows the area of domestic producer surplus, completely shaded.




**Part C**

Select a point value to view scoring criteria, solutions, and/or examples and to score the response.

| 0 | 1 | 2 ✓ |
|---|---|---|

The response accurately includes two of the criteria below.

States that the price of shoes will increase.

States that the producer surplus of domestic shoe producers will increase.

# Unit 2 Practice Questions - ALL

**Part D**

Select a point value to view scoring criteria, solutions, and/or examples and to score the response.

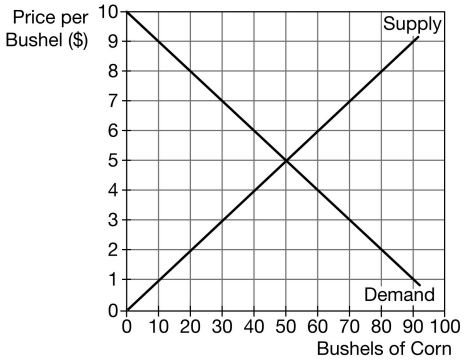
| 0 | 1 ✓ |
|---|---|

The response accurately includes the criteria below.

- ☐ Explains that tariffs increase government revenue more than quotas do.

# Unit 2 Practice Questions - ALL

**258. Include correctly labeled diagrams, if useful or required, in explaining your answers. A correctly labeled diagram must have all axes and curves clearly labeled and must show directional changes. If the question prompts you to "Calculate," you must show how you arrived at your final answer.**




The diagram above shows the market for corn in the country of Microland. Corn is produced and sold in a constant-cost, perfectly competitive market.

(a) Calculate the total revenue earned by corn farmers at the market equilibrium price. Show your work.

(b) In an attempt to assist corn farmers in Microland, the government sets a $7 price floor on corn.

(i) How many bushels of corn will be exchanged at the price floor?
(ii) Calculate the deadweight loss associated with the price floor. Show your work.
(iii) Assume the government agrees to buy the unsold quantity at $7. Calculate the producer surplus. Show your work.
(iv) Assume the price floor and the government buying program remain in effect. In addition, assume the demand for corn does not change. In the long run, will the quantity of corn purchased by the government increase, decrease, or remain the same? Explain.

Respond to all parts of the question:

**Part A**

Select a point value to view scoring criteria, solutions, and/or examples and to score the response.

The response must show appropriate work in order to receive the point.

| 0 | 1 ✓ |
|---|---|

The response calculates the total revenue at the market price as $250 and shows the work.

$\text{Total Revenue} = (\text{P} \times \text{Q}) = (\$5 \times 50) = \$250$

**Part B**

Select a point value to view scoring criteria, solutions, and/or examples and to score the response.

The response must show appropriate work in order to receive the point.

| 0 | 1 | 2 | 3 | 4 ✓ |
|---|---|---|---|---|

The response accurately includes the four criteria below.

- ☐ States that the quantity exchanged at the price floor will be 30 bushels.
- ☐ Calculates the deadweight loss as $40 and shows the work.
  $\text{Deadweight loss} = \frac{(\$7 - \$3) \times (50 - 30)}{2} = \frac{\$80}{2} = \$40$
- ☐ Calculates the producer surplus as $245 and shows the work.
  $\text{Producer surplus} = \frac{(\$7 - \$0) \times (70 - \$0)}{2} = \frac{\$490}{2} = \$245$
- ☐ States that the quantity of corn purchased by the government will increase and explains that this happens because the price floor leads to short-run economic profits for typical firms, which incentivizes new firms to enter the market, leading to an increase in the market supply of corn and/or because the market supply becomes more elastic in the long run.

# Unit 2 Practice Questions - ALL

**259.** Which of the following best illustrates the concept of consumer surplus?

(A) A thirsty athlete pays $0.85 for a cold drink when she would have gladly paid 1.50 for the drink. ✓

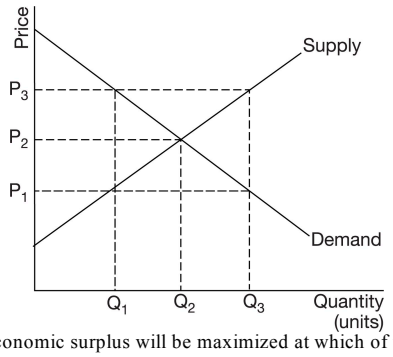
(B) An individual who is willing to accept a job at $7.50 per hour is offered 7.00 per hour.

(C) An individual pays the sale price of $15.00 for the same shirt that the individual refused to purchase earlier at 18.00.

(D) An individual finds that the price of artichokes, a food she dislikes, has been reduced by 50 percent.

(E) A wood-carver has a marginal cost of $5.00 for a unit of output, but sells that unit at 6.00.

**260.**




In the market described by the diagram above, the total economic surplus will be maximized at which of the following price and quantity combinations?

(A) $P_3$ and $Q_1$

(B) $P_3$ and $Q_3$

(C) $P_2$ and $Q_2$ ✓

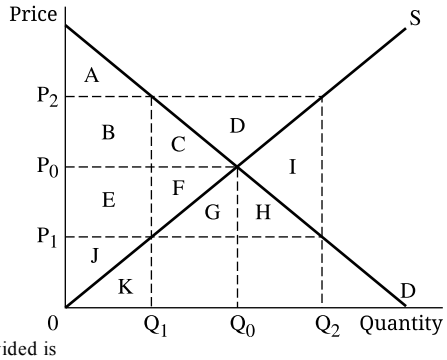
(D) $P_1$ and $Q_1$

(E) $P_1$ and $Q_3$

**Answer C**

Correct. Total economic surplus is maximized when the market is in equilibrium. The market equilibrium occurs at a price of $P_2$, and a quantity of $Q_2$. Raising or lowering the quantity relative to the equilibrium reduces total surplus and creates inefficiency (deadweight loss).

**261.**




The efficient market outcome shown in the graph provided is

(A) at price $P_1$, quantity $Q_1$, and total economic surplus is $J + K$

(B) at price $P_2$, quantity $Q_2$, and total economic surplus is $B + C + D + E + F + G + H + I$

(C) at price $P_0$, quantity $Q_0$, and total economic surplus is $B + C + E + F$

(D) at price $P_0$, quantity $Q_0$, and total economic surplus is $A + B + C + E + F$

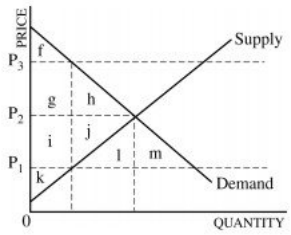
(E) at price $P_0$, quantity $Q_0$, and total economic surplus is $A + B + C + E + F + J$ ✓

**Answer E**

Correct. The efficient market outcome occurs at the intersection of the supply and demand curves $P_0$ and $Q_0$ and where the sum of consumer surplus ($A + B + C$) and producer surplus ($E + F + J$) is maximized, which comprises total economic surplus.

# Unit 2 Practice Questions - ALL

The following questions refer to the diagram below.The letters on the graph represent enclosed areas.




**262.** When the market is in equilibrium, the total economic surplus is equal to area

(A) f + k

(B) f + g + i + k

(C) g + h + i + j

(D) f + g + h + i + j + k ✓

(E) f + g + h + i + j + k + l + m

**263.** If a price ceiling is set at $P_1$, which of the following areas represent the resulting consumer surplus, producer surplus, and deadweight loss?

(A)

| Consumer Surplus | Producer Surplus | Deadweight Loss |
|---|---|---|
| f | k | l + m |

(B)

| Consumer Surplus | Producer Surplus | Deadweight Loss |
|---|---|---|
| f + g + h | k + l | h + j |

(C)

| Consumer Surplus | Producer Surplus | Deadweight Loss |
|---|---|---|
| f + g + h | i + j + k | l + m |

(D) ✓

| Consumer Surplus | Producer Surplus | Deadweight Loss |
|---|---|---|
| f + g + i | k | h + j |

(E)

| Consumer Surplus | Producer Surplus | Deadweight Loss |
|---|---|---|
| f + g + i | h + j | l + m |

# Unit 2 Practice Questions - ALL

**264. Include correctly labeled diagrams, if useful or required, in explaining your answers. A correctly labeled diagram must have all axes and curves clearly labeled and must show directional changes. If the question prompts you to "Calculate," you must show how you arrived at your final answer.**

The table below shows the marginal benefit, in dollars, that Yanick derives from consuming two goods, Good A and shirts.

| Quantity of Good A | Marginal Benefit of Good A | Quantity of Shirts | Marginal Benefit of Shirts |
|---|---|---|---|
| 1 | $64 | 1 | $48 |
| 2 | $40 | 2 | $40 |
| 3 | $24 | 3 | $32 |
| 4 | $12 | 4 | $24 |
| 5 | $4 | 5 | $16 |
| 6 | $0 | 6 | $8 |

Yanick has a limited weekly income of $10, and he spends it all on Good A and shirts. Assume the price of Good A is $2 per unit and the price of each shirt is $4.

(a) Given his weekly income, would Yanick be able to buy 2 units of Good A and 2 shirts? Explain using numbers.

(b) Calculate the total consumer surplus from Good A if Yanick consumes 3 units of Good A. Show your work.

(c) Identify the quantity of Good A and the quantity of shirts that will maximize Yanick's total benefit given his weekly income. Explain using marginal analysis.

(d) Assume Good A is produced in a perfectly competitive market and that there is an increase in the number of consumers in the market for Good A.
(i) Will the quantity of Good A that will maximize Yanick's total benefit increase, decrease, or stay the same? Explain.
(ii) Would Yanick's total consumer surplus from Good A if he consumes 3 units of Good A increase, decrease, or stay the same compared to your answer in part (b) ? Explain.

Respond to all parts of the question.

**Part A**

Select a point value to view scoring criteria, solutions, and/or examples and to score the response.

| 0 | 1 ✓ |
|---|---|

The response states that no Yanick would not be able to consume 2 units of Good A and 2 shirts and explains that his total expenditures would be $12 ($= \$2 \times 2 + \$4 \times 2$), which is greater than his weekly income of $10.

**Part B**

Select a point value to view scoring criteria, solutions, and/or examples and to score the response.

| 0 | 1 ✓ |
|---|---|

The response calculates the total consumer surplus as $128 and shows the work.

$$\text{Total Consumer Surplus} = \text{Total Benefit} - \text{Total Expenditures}$$
$$= \$128 - \$6 = \$122$$

**Part C**

Select a point value to view scoring criteria, solutions, and/or examples and to score the response.

| 0 | 1 ✓ |
|---|---|

The response identifies that 3 units of Good A and 1 shirt will maximize Yanick's total benefit given his weekly income of $10 and explains that for the last unit of each good consumed the ratio of the marginal benefit to the price of Good A (12) is equal to the ratio of the marginal benefit to the price of shirts (12), or

$$\frac{MB_{Good\ A}}{Price_{Good\ A}} = \frac{MB_{Shirts}}{Price_{Shirts}}$$

$$\frac{\$24}{\$2} = \frac{\$48}{\$4}$$

$$12 = 12$$

# Unit 2 Practice Questions - ALL

**Part D**

Select a point value to view scoring criteria, solutions, and/or examples and to score the response.

| 0 | 1 | 2 ✓ |
|---|---|---|

The response does both of the following:

· States that the quantity of Good A that will maximize Yanick's total benefit will decrease and explains that an increase in the number of consumers in the market for Good A will increase the demand for Good A, which will increase the price of Good A and decrease the marginal benefit per dollar spent that Yanick gets from each additional unit of the good.

· States that Yanick's total consumer surplus would decrease and explains that an increase in the price of Good A would increase the total cost of consuming 3 units of Good A while the total benefit of consuming 3 units of Good A remains the same.

**265.** A decrease in raw material prices will change the equilibrium price and quantity in a market in which of the following ways?

(A)

| Price | Quantity |
|---|---|
| Increase | Increase |

(B)

| Price | Quantity |
|---|---|
| Increase | Decrease |

(C) ✓

| Price | Quantity |
|---|---|
| Decrease | Increase |

(D)

| Price | Quantity |
|---|---|
| Decrease | Decrease |

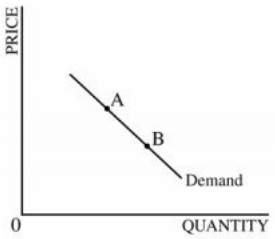
(E)

| Price | Quantity |
|---|---|
| No change | Increase |

**266.** A decrease in the supply of oranges raised the price of oranges in the market. The substitution effect of the price increase will motivate consumers to

(A) raise their real income to offset the price effect
(B) decrease their demand for oranges
(C) demand that the government set a price ceiling for oranges
(D) increase the quantity of other fruits demanded and decrease the quantity of oranges demanded ✓
(E) decrease the quantity of other fruits demanded and increase the quantity of oranges demanded

**267.**

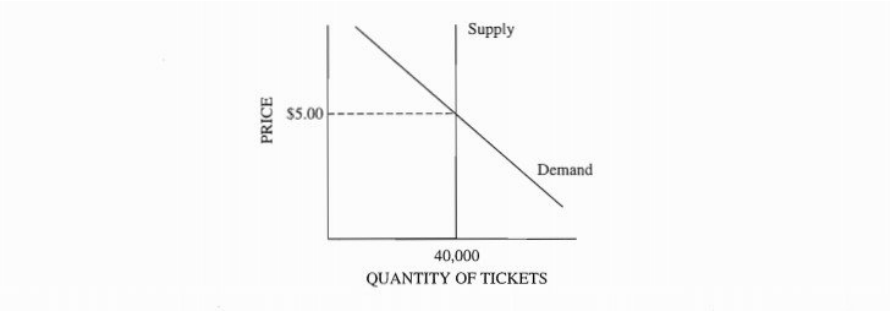



The graph above shows the market demand for good X. A movement from point A to point B would most likely be caused by

(A) an increase in the price of good Z, a substitute
(B) an increase in consumers' income
(C) a decrease in consumers' income
(D) a decrease in production costs for good X ✓
(E) a decrease in the supply of good X

# Unit 2 Practice Questions - ALL

**268.**




The Toledo arena holds a maximum of 40,000 people, as indicated in the graph above. Each year the circus holds eight performances, all of which are sold out.

a. Analyze the effect on each of the following of the addition of a fantastic new death-defying trapeze act that increases the demand for tickets.

i. The price of tickets

ii. The quantity of tickets sold

b. The city of Toledo institutes an effective price ceiling on tickets. Explain where the price ceiling would be set. Explain the impact of the ceiling on each of each of the following.

i. The quantity of tickets demanded

ii. The quantity of tickets supplied

c. Will everyone who attends the circus pay the ceiling price set by the city of Toledo? Why or why not?

Respond to all parts of the question.

**Part A**

**2 Points**

**1 -** Price increases as a result of the demand increase

**1 -** Quantity remains the same

| 0 | 1 | 2 ✓ |
|---|---|---|

The student earns all of the following points:

**1 -** Price increases as a result of the demand increase

**1 -** Quantity remains the same

**Part B**

**2 Points**

- **1 -** Setting the price ceiling below the equilibrium price.
- **1 -** Quantity demanded increases
- **1/2 -** Quantity supplied unchanged

| 0 | 1 | 2 ✓ |
|---|---|---|

The student earns all of the following points:

- **1 -** Setting the price ceiling below the equilibrium price.
- **1 -** Quantity demanded increases
- **1/2 -** Quantity supplied unchanged

# Unit 2 Practice Questions - ALL

**Part C**

**1 Point**

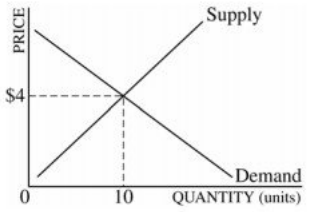
**1 -** for no, a secondary market or reselling of tickets or scalping of tickets will have some circus-goers paying more than the ceiling price.

| 0 | 1 ✓ |
|---|---|

The student earns all of the following points:

- **1 -** for no, a secondary market or reselling of tickets or scalping of tickets will have some circus-goers paying more than the ceiling price.

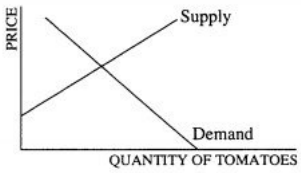
**269.**




In the market shown in the graph above, at a price of $5, there will be

(A) a surplus and the price will eventually fall ✓
(B) a surplus generating a decrease in demand
(C) a shortage and the price will eventually rise
(D) a shortage generating an increase in supply
(E) an increase in supply and a decrease in demand

**270.**




On the basis of the graph above, which of the following statements concerning changes in the demand for and supply of tomatoes is correct?

(A) If both the demand and supply increase, the price of tomatoes will definitely increase.
(B) If both the demand and supply decrease, the quantity of tomatoes sold will definitely increase.
(C) If the demand decreases while the supply increases, the price of tomatoes sold will definiftely increase
(D) If the demand decreases while the supply increases, the quantity of tomatoes sold will definitely decrease.
(E) If the demand increases while the supply decreases, the price of tomatoes will definitely increase. ✓

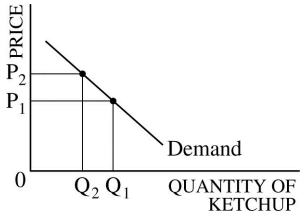
**271.** Assume that more corn is used to produce ethanol. Simultaneously, more effective control of pests and weeds occurs in farming.

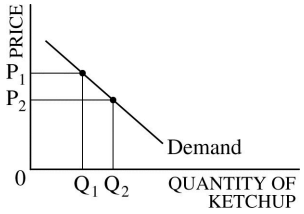
Which of the following will definitely occur in the corn market?

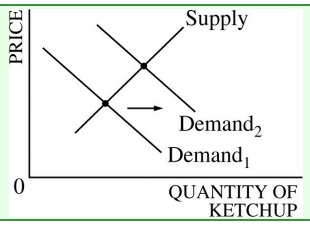
(A) The price of corn will increase.
(B) The quantity of corn will decrease.
(C) The price of corn will decrease.
(D) The quantity of corn will increase. ✓
(E) The supply of corn will decrease.

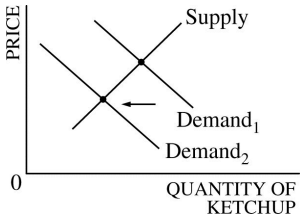
# Unit 2 Practice Questions - ALL

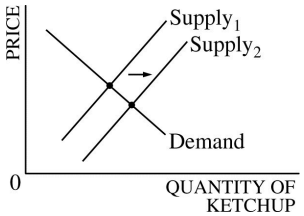
**272.** Assume that mustard and ketchup are considered substitutes by consumers. If the price of mustard increases, which of the following graphs represents the most likely response in the ketchup market?

(A)



(B)



(C) ✓



(D)



(E)



**273.** Assume that popcorn and movie attendance are complements and that Salty Concession grows corn suitable for popping. Mr Concession will most likely sell a greater quantity of popping corn at a higher price if which of the following occurs?

(A) The wages of farm workers and movie theater employees increase.

(B) A technological improvement results in less expensive and more efficient harvesting of corn.

(C) The introduction of new fat-free potato chips provides new competition in the snack-food market.

(D) The release of three summer movies sets records for movie attendance ✓

(E) New government regulations force movie theaters to hire more security guards at each theater.

# Unit 2 Practice Questions - ALL

**274.** Assume that the government increases the unit excise tax on gasoline suppliers and also that people commute longer distances to work as more houses are built in city suburbs. As a result, the equilibrium price and quantity of gasoline will most likely change in which of the following ways?

(A)

| Price | Quantity |
|---|---|
| Decrease | Decrease |

(B)

| Price | Quantity |
|---|---|
| Increase | Decrease |

(C)

| Price | Quantity |
|---|---|
| Increase | Increase |

(D) ✓

| Price | Quantity |
|---|---|
| Increase | Indeterminate |

(E)

| Price | Quantity |
|---|---|
| Indeterminate | Increase |

**275.** Assume that the market for beef is perfectly competitive and in equilibrium. Which of the following would most likely result in an increase in both the equilibrium price and the equilibrium quantity of beef?

(A) An increase in the supply of chicken, a substitute good
(B) A decrease in consumers' income, assuming that beef is a normal good
(C) An increase in the supply of potatoes, a complementary good ✓
(D) An increase in the price of corn, an input in the production of beef
(E) An announcement by the medical community that consumption of beef increases the risk of heart disease

**276.** Assume that the market for lemonade is perfectly competitive and currently in equilibrium. Lemons are key ingredients in lemonade. If the price of lemons decreases, how will the lemonade market be affected?

(A) Supply will shift leftward, increasing the equilibrium price and decreasing the equilibrium quantity of lemonade.
(B) Supply will shift rightward, increasing the equilibrium price and increasing the equilibrium quantity of lemonade.
(C) Supply will shift rightward, decreasing the equilibrium price and increasing the equilibrium quantity of lemonade. ✓
(D) Demand will shift leftward, decreasing the equilibrium price and decreasing the equilibrium quantity of lemonade.
(E) Demand will shift rightward, increasing the equilibrium price and increasing the equilibrium quantity of lemonade.

**277.** Assume that the market for tomatoes is in equilibrium at a price of $35 per bushel. If the demand for tomatoes decreases, which of the following will occur?

(A) A shortage at $35, creating an increase in price, leading to an increase in quantity supplied
(B) A shortage at $35, leading to an increase in supply and a decrease in price
(C) A surplus at $35, leading to a decrease in price and in quantity supplied ✓
(D) A surplus at $35, leading to a decrease in supply and an increase in price
(E) A surplus at $35, leading to an increase in price and a decrease in quantity demanded

**278.** At a price of $10, the quantity demanded of pizzas is 100 and the quantity supplied is 150. Which of the following statements must be true?

(A) There is a shortage of pizza at a price of $10.
(B) The equilibrium price of pizza is below $10. ✓
(C) The quantity of pizzas sold will be 150.
(D) At equilibrium, fewer than 100 pizzas will be sold.
(E) The pizza market is in equilibrium.

# Unit 2 Practice Questions - ALL

**279.** Assume that the government imposes a binding price ceiling on a market for an inferior good. Which of the following is most likely to occur in the market if consumers' incomes increase?

(A) The market demand will shift to the right.
(B) The market supply will shift to the right.
(C) The shortage in the market will decrease. ✓
(D) The surplus in the market will increase.
(E) The market price will increase.

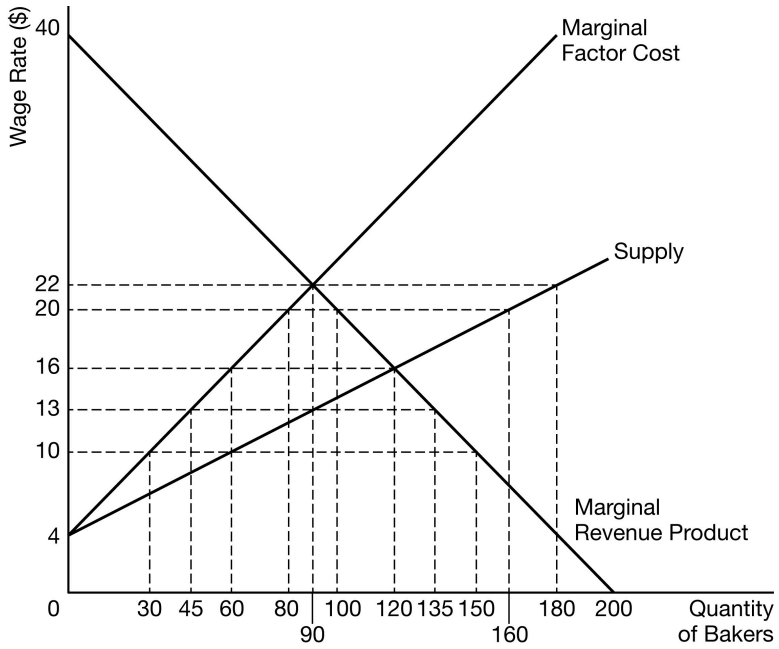
**Answer C**

Correct. A binding price ceiling means that there is a legal maximum price below the equilibrium price which creates a shortage, as the quantity demanded will exceed the quantity supplied. An increase in consumers' incomes causes a decrease in the demand for an inferior good, the demand curve will shift to the left, and the shortage will decrease.

# Unit 2 Practice Questions - ALL

**280. Include correctly labeled diagrams, if useful or required, in explaining your answers. A correctly labeled diagram must have all axes and curves clearly labeled and must show directional changes. If the question prompts you to "Calculate," you must show how you arrived at your final answer.**

Bobby's Bakehouse is the only bakery in a small remote town, and Bobby's Bakehouse is the only employer of bakers in the area. The graph below shows the market for bakers with the marginal factor (resource) cost curve, the labor supply curve, and the marginal revenue product curve.




(a) If the wage rate is $13, state whether there will be a shortage or a surplus of bakers and calculate its size. Show your work.

(b) Identify the profit-maximizing number of bakers that Bobby's Bakehouse will hire. Explain using the labeling on the graph.

(c) Identify the profit-maximizing wage rate that Bobby's Bakehouse will pay its bakers. Explain using the labeling on the graph.

(d) If the marginal product of bakers increases, what will happen to the quantity of output produced by Bobby's Bakehouse? Explain.

(e) Assume instead that Bobby's Bakehouse uses both labor and capital in its production of baked goods. The marginal product of the last unit of labor hired is 16 baked goods per hour and the marginal product of the last unit of capital rented is 50 baked goods per hour; the hourly wage rate for labor is $8 and the hourly rental price for capital is $5. To minimize the cost of producing its current level of output, should Bobby's Bakehouse rent more capital, less capital, or the same amount of capital? Explain using marginal analysis.

Respond to parts of the question.

**Part A**

Select a point value to view scoring criteria, solutions, and/or examples and to score the response.

| 0 | 1 ✓ |
|---|---|

The response states that there will be a shortage at a wage of $13, calculates the shortage as 45 bakers, and shows the work.

$\text{Shortage} = \text{Quantity Demanded} - \text{Quantity Supplied} = 135 - 90 = 45$

**Part B**

Select a point value to view scoring criteria, solutions, and/or examples and to score the response.

| 0 | 1 ✓ |
|---|---|

The response identifies the profit-maximizing number of workers as 90 and explains that at that quantity, the marginal revenue product is equal to the marginal factor cost.

**Part C**

Select a point value to view scoring criteria, solutions, and/or examples and to score the response.

# Unit 2 Practice Questions - ALL

| 0 | 1 ✓ |
|---|---|

The response identifies the wage the firm will pay as $13 and explains that this is the wage on the supply curve at the profit-maximizing number of workers (where marginal revenue product is equal to marginal factor cost).

**Part D**

Select a point value to view scoring criteria, solutions, and/or examples and to score the response.

| 0 | 1 ✓ |
|---|---|

The response states that the quantity of output produced will increase and explains that as each worker's extra output (marginal product) increases, the firm's MRP increases, increasing the quantity of labor hired as well as the quantity of output produced by the firm.

**Part E**

Select a point value to view scoring criteria, solutions, and/or examples and to score the response.

| 0 | 1 ✓ |
|---|---|

The response states that the firm should rent more capital and explains that the ratio of the marginal product of labor to the wage (2) is less than the ratio of the marginal product of capital to the rental price of capital (10), or the firm can get more output for their money by renting more capital, or

$$\frac{MP_{Labor}}{P_{Labor}} < \frac{MP_{Capital}}{P_{Capital}}$$

$$\frac{16}{8} < \frac{50}{5}$$

$$2 < 10$$

**281.** Which of the following changes in the demand for and the supply of a good will necessarily result in an increase in both the equilibrium price and quantity of the good in a market?

(A)

| Demand | Supply |
|---|---|
| Increase | Increase |

(B) ✓

| Demand | Supply |
|---|---|
| Increase | No change |

(C)

| Demand | Supply |
|---|---|
| No change | Increase |

(D)

| Demand | Supply |
|---|---|
| Decrease | Increase |

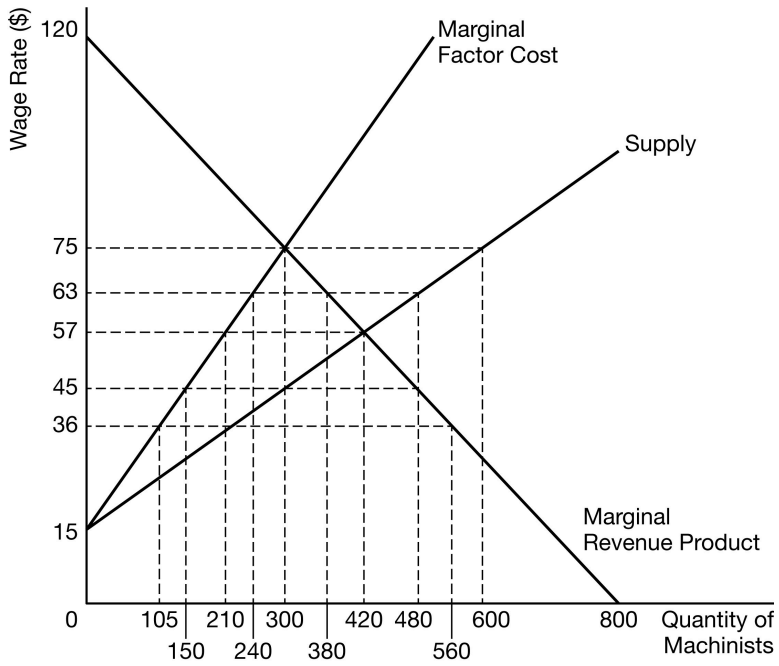
(E)

| Demand | Supply |
|---|---|
| No change | Decrease |

# Unit 2 Practice Questions - ALL

**282. Include correctly labeled diagrams, if useful or required, in explaining your answers. A correctly labeled diagram must have all axes and curves clearly labeled and must show directional changes. If the question prompts you to "Calculate," you must show how you arrived at your final answer.**

Central Manufacturing Company is the only manufacturing facility in a small remote town, and Central Manufacturing Company is the only employer of machinists in the area. The graph below shows the market for machinists with the marginal factor (resource) cost curve, the labor supply curve, and the marginal revenue product curve.




(a) If the wage rate is $63, state whether there will be a shortage or a surplus of machinists and calculate its size. Show your work.

(b) Identify the profit-maximizing number of machinists. Explain using the labeling on the graph.

(c) Identify the profit-maximizing wage rate that Central Manufacturing Company will pay its machinists. Explain using the labeling on the graph.

(d) If the marginal product of machinists increases, what will happen to the quantity of output produced by Central Manufacturing Company? Explain.

(e) Assume instead that Central Manufacturing Company uses both labor and capital in producing widgets. The marginal product of the last unit of labor hired is 120 widgets per day and the marginal product of the last unit of capital rented is 150 widgets per day; the daily wage rate for labor is $40 and the daily rental price for capital is 30. To minimize the cost of producing its current level of output, should Central Manufacturing Company rent more capital, less capital, or the same amount of capital? Explain using marginal analysis.

Respond to all parts of the question.

**Part A**

Select a point value to view scoring criteria, solutions, and/or examples and to score the response.

| 0 | 1 ✓ |
|---|---|

The response states that there will be a surplus at a wage of $63, calculates the surplus as 100 workers, and shows the work.

$$\text{Surplus} = \text{Quantity Supplied} - \text{Quantity Demanded} = 480 - 380 = 100$$

**Part B**

Select a point value to view scoring criteria, solutions, and/or examples and to score the response.

| 0 | 1 ✓ |
|---|---|

The response identifies the profit-maximizing number of workers as 300 and explains that at that quantity, the marginal revenue product is equal to the marginal factor cost.

**Part C**

# Unit 2 Practice Questions - ALL

Select a point value to view scoring criteria, solutions, and/or examples and to score the response.

| 0 | 1 ✓ |
|---|---|

The response identifies the wage the firm will pay as $45 and explains that this is the wage on the supply curve at the profit-maximizing number of workers (where marginal revenue product is equal to marginal factor cost).

**Part D**

Select a point value to view scoring criteria, solutions, and/or examples and to score the response.

| 0 | 1 ✓ |
|---|---|

The response states that the quantity of output produced will increase and explains that as each worker's extra output (marginal product) increases, the firm's MRP increases, increasing the quantity of labor hired as well as the quantity of output produced by the firm.

**Part E**

Select a point value to view scoring criteria, solutions, and/or examples and to score the response.

| 0 | 1 ✓ |
|---|---|

The response states that the firm should rent more capital and explains that the ratio of the marginal product of labor to the wage (3) is less than the ratio of the marginal product of capital to the rental price of capital (5), or the firm can get more output for their money by renting more capital, or

$$\frac{MP_{Labor}}{P_{Labor}} < \frac{MP_{Capital}}{P_{Capital}}$$

$$\frac{120}{40} < \frac{150}{30}$$

$$3 < 5$$

**283.** Which of the following will initially result from an increase in the market demand for a good?

(A) There will be a matching increase in supply.
(B) There will be a decrease in quantity supplied.
(C) The equilibrium price will decrease.
(D) There will be a temporary shortage at the original equilibrium price. ✓
(E) Total producer surplus in the market will decrease.

**Answer D**

Correct. A shift of the demand curve to the right will create a shortage at the original equilibrium price, which will be eliminated by a rising price to reach a new equilibrium.

# Unit 2 Practice Questions - ALL

**284.** Assume that the market for a good is characterized by a downward-sloping demand curve and an upward-sloping supply curve. Suppose that there is an improvement in technology for producing the good. Which of the following would occur?

(A) The impact on consumer surplus would be indeterminate, because of the offsetting impact of the changes in equilibrium price and quantity.
(B) The change in equilibrium price would cause producer surplus to increase.
(C) The total economic surplus in the market would increase. ✓
(D) The demand curve would shift right in response to an increase in the equilibrium price.
(E) The supply curve would shift up resulting in an increase in the equilibrium price and the producer surplus.

**Answer C**

Correct. The improvement in production technology shifts the supply curve to the right. A shift in the supply curve to the right lowers the equilibrium price and raises the equilibrium quantity. Consumer surplus would increase with the decrease in price and the increase in quantity. The change in producer surplus would be indeterminate because of the offsetting effects of the price and quantity change on producer surplus. However, any loss in producer surplus resulting from a lower price would be transferred to consumer surplus. Thus, total economic surplus in the market would definitely increase.

**285.** Which of the following is most likely to occur when a competitive market adjusts from one equilibrium to another?

(A) A decrease in demand will cause the equilibrium price, equilibrium quantity, and total surplus to increase.
(B) An increase in demand will cause the equilibrium price, equilibrium quantity, and producer surplus to increase. ✓
(C) A decrease in supply will cause the equilibrium price to decrease, the equilibrium quantity to increase, and consumer surplus to decrease.
(D) An increase in supply will cause the equilibrium price to increase, the equilibrium quantity to decrease, and consumer surplus to increase.
(E) A decrease in supply and increase in demand will cause the equilibrium quantity to decrease but the equilibrium price to be indeterminate.

**Answer B**

Correct. An increase in demand shifts the demand curve to the right. A rightward shift in the demand curve results in an increase in the equilibrium price and the equilibrium quantity, which causes producer surplus (the triangle below the equilibrium price and above the supply curve) to increase.

**286.** Consider the market for arugula, a normal good. Which of the following changes would result in an increase in both the equilibrium price and the equilibrium quantity of arugula?

(A) A decrease in consumer income
(B) An increase in the price of salad dressing, a complement in consumption
(C) A decrease in the price of radicchio, a substitute in consumption
(D) An increase in the price of water irrigation for arugula farms
(E) An increase in population ✓

**Answer E**

Correct. An increase in population causes demand to increase. When demand increases, the demand curve shifts to the right. A shift to the right in the demand curve raises the equilibrium price and equilibrium quantity.

**287.** If the supply of fish increases, there will be

(A) an increase in the demand for chicken, a substitute good
(B) an increase in the demand for fish
(C) an increase in the price of fish tacos
(D) a decrease in the price of fish ✓
(E) a decrease in the supply of potatoes, a complementary good

**Answer D**

Correct. An increase in the supply of fish will shift the supply curve to the right, decreasing the price of fish and increasing the quantity supplied of fish.

# Unit 2 Practice Questions - ALL

**288.** What will happen to the price and quantity of footballs as a result of an increase in the price of leather used to make footballs?

(A) Price will increase, and quantity will increase.

(B) Price will increase, and quantity will decrease. ✓

(C) Price will decrease, and quantity will increase.

(D) Price will decrease, and quantity will decrease.

(E) Price will not change, and quantity will not change.

**Answer B**

Correct. Leather is an input for footballs. If the price of leather increases, the supply curve of footballs will shift to the left along a downward sloping demand curve; equilibrium quantity will decrease, and price will increase.

**289.** If an unusually cold summer destroyed a large portion of the bee population, the equilibrium price and quantity of honey produced by bees will most likely change in which of the following ways?

(A)

| Price | Quantity |
|---|---|
| Increase | Increase |

(B) ✓

| Price | Quantity |
|---|---|
| Increase | Decrease |

(C)

| Price | Quantity |
|---|---|
| Increase | No change |

(D)

| Price | Quantity |
|---|---|
| Decrease | Decrease |

(E)

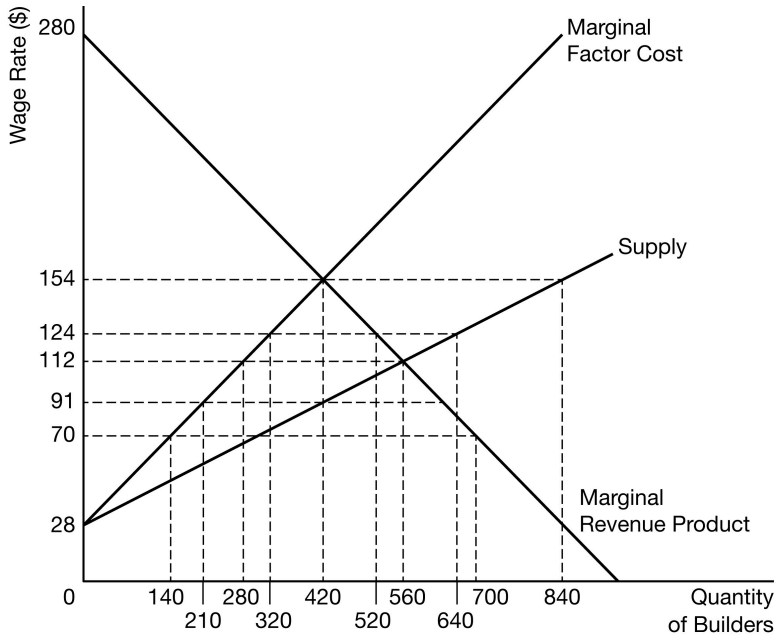
| Price | Quantity |
|---|---|
| No change | Decrease |

**Answer B**

# Unit 2 Practice Questions - ALL

**290. Include correctly labeled diagrams, if useful or required, in explaining your answers. A correctly labeled diagram must have all axes and curves clearly labeled and must show directional changes. If the question prompts you to "Calculate," you must show how you arrived at your final answer.**

Cornel's Construction is the only builder in a small remote town, and Cornel's Construction is the only employer of builders in the area. The graph below shows the market for builders with the marginal factor (resource) cost curve, the labor supply curve, and the marginal revenue product curve.




(a) If the wage rate is $124, state whether there will be a shortage or a surplus of builders and calculate its size. Show your work.

(b) Identify the profit-maximizing number of builders that Cornel's Construction will hire. Explain using the labeling on the graph.

(c) Identify the profit-maximizing wage rate that Cornel's Construction will pay its builders. Explain using the labeling on the graph.

(d) If the marginal product of builders increases, what will happen to the quantity of services provided by Cornel's Construction? Explain.

(e) Assume instead that Cornel's Construction uses both labor and capital in providing its services. The marginal product of the last unit of labor hired is 15 projects per hour and the marginal product of the last unit of capital rented is 10 projects per hour; the hourly wage rate for labor is $150 and the hourly rental price for capital is $50. To minimize the cost of providing its current level of output, should Cornel's Construction rent more capital, less capital, or the same amount of capital? Explain using marginal analysis.

Respond to all parts of the question.

**Part A**

Select a point value to view scoring criteria, solutions, and/or examples and to score the response.

| 0 | 1 ✓ |
|---|---|

The response states that there will be a surplus at a wage of $124, calculates the surplus as 120 workers, and shows the work.

$\text{Surplus} = \text{Quantity Supplied} - \text{Quantity Demanded} = 640 - 520 = 120$

**Part B**

Select a point value to view scoring criteria, solutions, and/or examples and to score the response.

| 0 | 1 ✓ |
|---|---|

The response identifies the profit-maximizing number of workers as 420 and explains that at that quantity, the marginal revenue product is equal to the marginal factor cost.

**Part C**

Select a point value to view scoring criteria, solutions, and/or examples and to score the response.

# Unit 2 Practice Questions - ALL

| 0 | 1 ✓ |
|---|---|

The response identifies the wage the firm will pay as $91 and explains that this is the wage on the supply curve at the profit-maximizing number of workers (where marginal revenue product is equal to marginal factor cost).

**Part D**

Select a point value to view scoring criteria, solutions, and/or examples and to score the response.

| 0 | 1 ✓ |
|---|---|

The response states that the quantity of services provided will increase and explains that as each worker's extra output (marginal product) increases, the firm's MRP increases, increasing the quantity of labor hired as well as the quantity of output produced by the firm.

**Part E**

Select a point value to view scoring criteria, solutions, and/or examples and to score the response.

| 0 | 1 ✓ |
|---|---|

The response states that the firm should rent more capital and explains that the ratio of the marginal product of labor to the wage (0.1) is less than the ratio of the marginal product of capital to the rental price of capital (0.2), or the firm can get more output for their money by renting more capital, or

$$\frac{MP_{Labor}}{P_{Labor}} < \frac{MP_{Capital}}{P_{Capital}}$$

$$\frac{15}{150} < \frac{10}{50}$$

$$0.1 < 0.2$$

**291.** If growing corn becomes more profitable than growing wheat, which of the following will occur?

(A) The supply of corn will decrease.
(B) The price of wheat will decrease.
(C) The price of corn will decrease. ✓
(D) The demand for wheat will increase.
(E) The demand for corn will increase.

**292.** Assume that the market demand for a good is perfectly inelastic, the market supply for the good is perfectly elastic, and the market is in equilibrium. If there is a decrease in the price of a key input used in the production of the good, which of the following will occur?

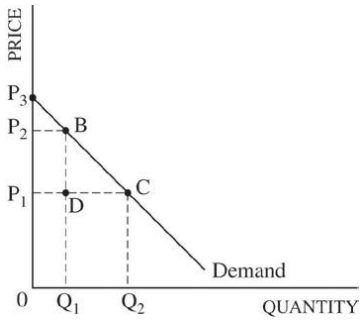
(A) There will be a decrease in the equilibrium quantity.
(B) There will be no change in the producer surplus. ✓
(C) There will be a decrease in the producer surplus.
(D) There will be a decrease in the consumer surplus.
(E) There will be an increase in the equilibrium price.

**Answer B**

Correct. With a perfectly elastic (horizontal) supply curve, there is no producer surplus.

# Unit 2 Practice Questions - ALL

**293.**




The diagram above shows the demand curve for a good. If the price increases from $P_1$ to $P_2$, and quantity consumed decreases from $Q_2$ to $Q_1$ , consumer surplus decreases by the area

(A) BDC

(B) $P_1P_2BC$ ✓

(C) $P_1P_2BD$

(D) $Q_1DCQ_2$

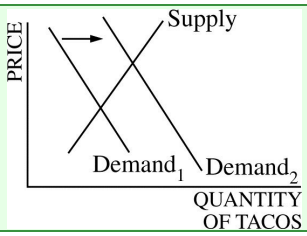
(E) $P_2P_3B$

**Answer B**

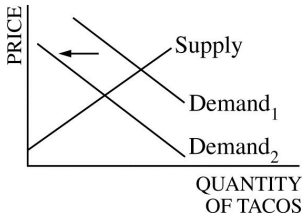
# Unit 2 Practice Questions - ALL

**294.** For consumers, assume that fish sticks and tacos are substitutes. Which of the following graphs illustrates the effect on the taco market if the price of fish sticks increases?

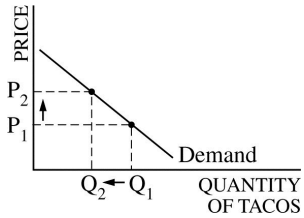
(A) ✓



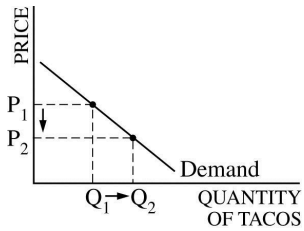

(B)



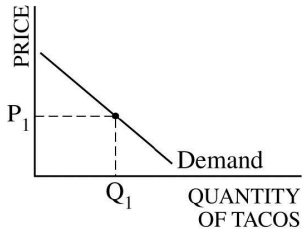

(C)




(D)




(E)




**295.** Given an increase in the price of material K— which is an input used to produce good X— and an increase in the price of good Y— which is a substitute for good X— which of the following will definitely occur?

(A) The equilibrium price of good X will decrease.

(B) The equilibrium price of good X will increase. ✓

(C) The equilibrium quantity of good X will be unaffected.

(D) The equilibrium quantity of good X will increase.

(E) The equilibrium quantity of good X will decrease.

**296.** Which of the following describes how a market will respond when the scarcity of a good increases?

(A) Consumers will increase their demand for the good

(B) Consumers will decrease their demand for the good.

(C) The price of the good will increase. ✓

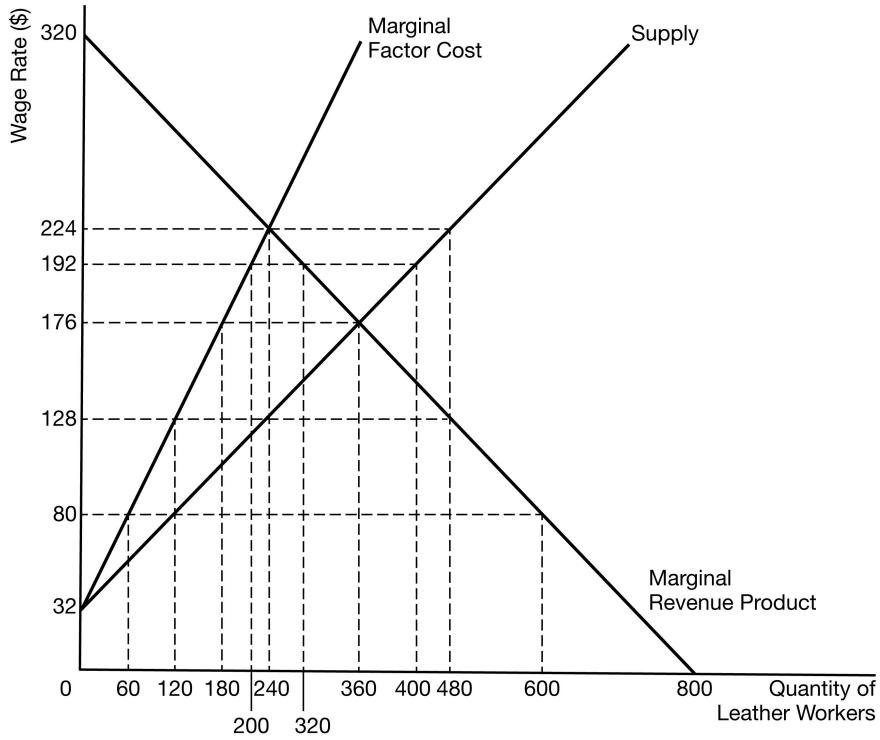
(D) The price of the good will decrease.

(E) Producers will increase the supply of the good.

# Unit 2 Practice Questions - ALL

**297. Include correctly labeled diagrams, if useful or required, in explaining your answers. A correctly labeled diagram must have all axes and curves clearly labeled and must show directional changes. If the question prompts you to "Calculate," you must show how you arrived at your final answer.**

Henri's Handbags is the only leather bags shop in a small remote town, and Henri's Handbags is the only employer of leather workers in the area. The graph below shows the market for leather workers with the marginal factor (resource) cost curve, the labor supply curve, and the marginal revenue product curve.




(a) If the wage rate is $192, state whether there will be a shortage or a surplus of leather workers and calculate its size. Show your work.

(b) Identify the profit-maximizing number of leather workers that Henri's Handbags will hire. Explain using the labeling on the graph.

(c) Identify the profit-maximizing wage rate that Henri's Handbags will pay its leather workers. Explain using the labeling on the graph.

(d) Assume that the market for leather workers becomes perfectly competitive. What wage rate would Henri's Handbags pay its leather workers if it were a perfectly competitive firm? Explain using labeling on the graph.

(e) Assume instead that Henri's Handbags uses both labor and capital in its production of handbags. The marginal product of the last unit of labor hired is 180 handbags per hour and the marginal product of the last unit of capital rented is 160 handbags per hour; the hourly wage rate for labor is $60 and the hourly rental price for capital is $20. To minimize the cost of producing its current level of output, should Henri's Handbags hire more leather workers, fewer leather workers, or the same number of leather workers? Explain using marginal analysis.

Respond to all parts of the question.

**Part A**

Select a point value to view scoring criteria, solutions, and/or examples and to score the response.

| 0 | 1 ✓ |
|---|---|

The response states that there will be a surplus at a wage of $192, calculates the surplus as 80 leather workers, and shows the work.

$$\text{Surplus} = \text{Quantity Supplied} - \text{Quantity Demanded} = 400 - 320 = 80$$

**Part B**

Select a point value to view scoring criteria, solutions, and/or examples and to score the response.

| 0 | 1 ✓ |
|---|---|

The response identifies the profit-maximizing number of workers as 240 and explains that at that quantity, the marginal revenue product is equal to the marginal factor cost.

# Unit 2 Practice Questions - ALL

**Part C**

Select a point value to view scoring criteria, solutions, and/or examples and to score the response.

| 0 | 1 ✓ |
|---|---|

The response identifies the wage the firm will pay as $128 and explains that this is the wage on the supply curve at the profit-maximizing number of workers (where marginal revenue product is equal to marginal factor cost).

**Part D**

Select a point value to view scoring criteria, solutions, and/or examples and to score the response.

| 0 | 1 ✓ |
|---|---|

The response states that the perfectly competitive wage would be $176 and explains that the wage would be determined by the intersection of the supply curve and the marginal revenue product curve.

**Part E**

Select a point value to view scoring criteria, solutions, and/or examples and to score the response.

| 0 | 1 ✓ |
|---|---|

The response states that the firm should hire fewer leather workers and explains that the ratio of the marginal product of labor to the wage (3) is less than the ratio of the marginal product of capital to the rental price of capital (8), or the firm can get more output for their money by hiring fewer workers, or

$$\frac{MP_{Labor}}{P_{Labor}} < \frac{MP_{Capital}}{P_{Capital}}$$

$$\frac{180}{60} < \frac{160}{20}$$

$$3 < 8$$

**298.** If a hurricane reduced the crab population, the price of crabs and quantity sold would change in which of the following ways?

(A)

| Price | Quantity |
|---|---|
| Increase | Increase |

(B) ✓

| Price | Quantity |
|---|---|
| Increase | Decrease |

(C)

| Price | Quantity |
|---|---|
| Decrease | Increase |

(D)

| Price | Quantity |
|---|---|
| Decrease | Decrease |

(E)

| Price | Quantity |
|---|---|
| No change | Decrease |

# Unit 2 Practice Questions - ALL

**299.** If a normal good is produced in a competitive market, which of the following combination of events could cause the price of the good to increase and the quantity to decrease?

(A) An increase in the average income of consumers and an increase in the number of producing firms

(B) An increase in the average income of consumers and an increase in the price of a variable input ✓

(C) An increase in the price of a substitute good an an increase in the number of producing firms

(D) A decrease in the number of consumers and a decrease in the price of a variable input

(E) A decrease in the average income of consumers and an increase in the number of producing firms

**300.** If both supply and demand for wheat increase, the equilibrium price and quantity of wheat will most likely change in which of the following ways?

(A)

| Price | Quantity |
|---|---|
| Decrease | Decrease |

(B)

| Price | Quantity |
|---|---|
| Decrease | Increase |

(C) ✓

| Price | Quantity |
|---|---|
| Indeterminate | Increase |

(D)

| Price | Quantity |
|---|---|
| Increase | Decrease |

(E)

| Price | Quantity |
|---|---|
| Increase | Indeterminate |

**301.** If cotton is used to produce towels, an increase in the price of cotton will result in which of the following changes in the towel market?

(A) A decrease in the demand for towels, which leads to a shortage of towels followed by upward pressure on the price of towels

(B) A decrease in the demand for towels, which leads to a surplus of towels followed by downward pressure on the price of towels

(C) A decrease in the supply of towels, which leads to a shortage of towels followed by upward pressure on the price of towels ✓

(D) An increase in the supply of towels, which leads to a surplus of towels followed by downward pressure on the price of towels

(E) An increase in both the demand and supply of towels, which leads to a surplus of towels followed by upward pressure on the price of towels

**302.** If shirts and ties are complements and if the price of shirts increases due to an increase in the price of cotton, which of the following is most likely to occur in the market for ties in the short run?

(A) The equilibrium price and quantity of ties will increase.

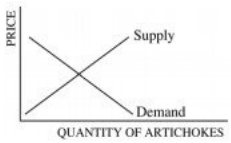
(B) The equilibrium price and quantity of ties will decrease. ✓

(C) The equilibrium price of ties will increase and the equilibrium quantity will decrease

(D) The supply of ties will increase.

(E) The demand for ties will increase.

**303.**




The graph above shows the supply and demand curves for artichokes. The surgeon general announces that eating an artichoke a day dramatically reduces one's likelihood of developing cancer. Simultaneously an infestation of the artichoke weevil severely damages the crop. Which of the following will definitely occur as a result?

(A) The supply of artichokes will increase.

(B) The price of artichokes will increase. ✓

(C) The demand for artichokes will decrease.

(D) The quantity of artichokes grown will decrease.

(E) The profits of farmers who specialize in growing artichokes will decrease.

# Unit 2 Practice Questions - ALL

**304.** Which of the following provides a possible explanation for a simultaneous increase in the equilibrium price and the quantity of blueberries in a market?

(A) An increase in the price of strawberries, a substitute ✓

(B) An increase in the supply of strawberries, a substitute

(C) An increase in the price of farmland used to grow blueberries

(D) A decrease in the price of blueberry harvesting equipment

(E) Imposition of a price floor in the market for blueberries

**Answer A**

Correct. Two goods are substitutes if an increase in the price of one increases the demand for the other. In this situation, the increase in the price of strawberries will cause an increase in the demand for blueberries, shifting the demand curve to the right. The result will be a higher equilibrium price and quantity in the blueberry market.

**305.** In a perfectly competitive market, which of the following shifts in the supply and demand curves will definitely cause both equilibrium price and quantity to decrease?

(A)

| Supply Curve | Demand Curve |
|---|---|
| Shifts to the left | Shifts to the left |

(B)

| Supply Curve | Demand Curve |
|---|---|
| Shifts to the left | No shift |

(C)

| Supply Curve | Demand Curve |
|---|---|
| Shifts to the right | Shifts to the right |

(D)

| Supply Curve | Demand Curve |
|---|---|
| No shift | Shifts to the right |

(E) ✓

| Supply Curve | Demand Curve |
|---|---|
| No shift | Shifts to the left |

**306.** The market for goldfish is perfectly competitive. From year 1 to year 2, both the price and the quantity of goldfish sold increase. This is most likely caused by

(A) an increase in the supply

(B) a decrease in the supply

(C) an increase in the demand ✓

(D) a decrease in the demand

(E) a decrease in both the demand and the supply

**307.** Which of the following will likely result in an indeterminate change in the equilibrium quantity of a competitive market?

(A) An increase in supply along a perfectly inelastic demand curve

(B) A decrease in supply along a relatively elastic demand curve

(C) A decrease in demand along a perfectly elastic supply curve

(D) An increase in demand and a decrease in supply ✓

(E) An increase in demand and an increase in supply

**Answer D**

Correct. An increase in demand will increase the equilibrium quantity, while a decrease in supply will decrease the equilibrium quantity; these offsetting effects will cause the final effect on the equilibrium quantity to be indeterminate.

# Unit 2 Practice Questions - ALL

**308.** Which of the following would cause the equilibrium price of good X to increase?

(A) Producers of good X find a new technology that reduces the cost of producing X.

(B) The price of an essential input in the production of good X increases. ✓

(C) Goods X and Y are complements, and the government imposes a tax on good Y.

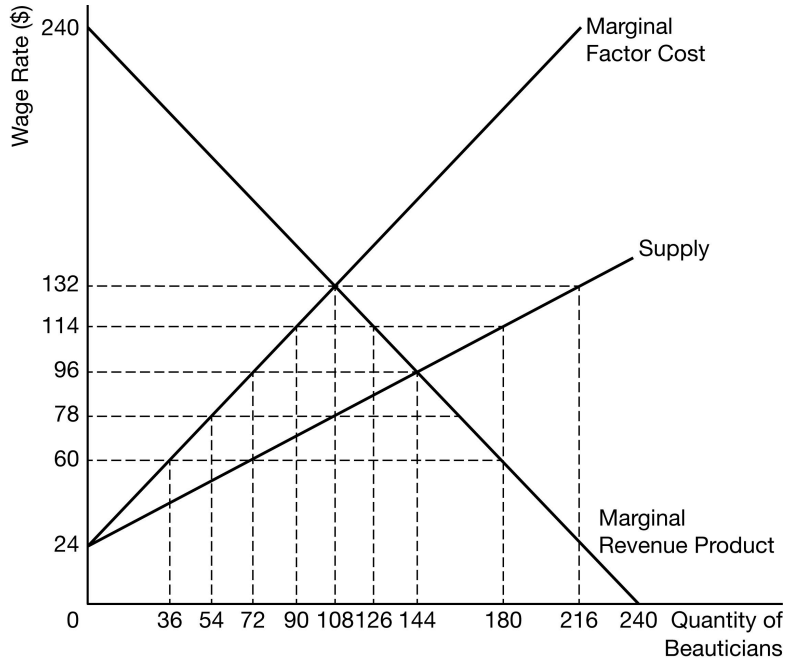
(D) Good X is a normal good, and the government increases income taxes by 3%.

(E) Good X is an inferior good, and the government decreases income taxes by 10%.

# Unit 2 Practice Questions - ALL

**309.** ***Include correctly labeled diagrams, if useful or required, in explaining your answers. A correctly labeled diagram must have all axes and curves clearly labeled and must show directional changes. If the question prompts you to "Calculate," you must show how you arrived at your final answer.***

Karen's Cuts is the only beauty salon in a small remote town, and Karen's Cuts is the only employer of beauticians in the area. The graph below shows the market for beauticians with the marginal factor (resource) cost curve, the labor supply curve, and the marginal revenue product curve.




(a Identify the profit-maximizing number of beauticians that Karen's Cuts will hire. Explain using the labeling on the graph.

(b) Identify the profit-maximizing wage rate that Karen's Cuts will pay its beauticians. Explain using the labeling on the graph.

(c) If the wage rate is $114, state whether there will be a shortage or a surplus of beauticians and calculate its size. Show your work.

(d) Assume that the market for beauticians becomes perfectly competitive. What wage rate would Karen's Cuts pay its beauticians if it were a perfectly competitive firm? Explain using labeling on the graph.

(e) Assume instead that Karen's Cuts uses both labor and capital in providing its services. The marginal product of the last unit of labor hired is 30 cuts per day and the marginal product of the last unit of capital rented is 20 cuts per day; the daily wage rate for labor is $60 and the daily rental price for capital is 20. To minimize the cost of providing its current level of services, should Karen's Cuts hire more beauticians, fewer beauticians, or the same number of beauticians? Explain using marginal analysis.

Respond to all parts of the question.

**Part A**

Select a point value to view scoring criteria, solutions, and/or examples and to score the response.

| 0 | 1 ✓ |
|---|---|

The response identifies the profit-maximizing number of beauticians as 108 and explains that at that quantity, the marginal revenue product is equal to the marginal factor cost.

**Part B**

Select a point value to view scoring criteria, solutions, and/or examples and to score the response.

| 0 | 1 ✓ |
|---|---|

The response identifies the wage the firm will pay as $78 and explains that this is the wage on the supply curve at the profit-maximizing number of workers (where marginal revenue product is equal to marginal factor cost).

**Part C**

# Unit 2 Practice Questions - ALL

Select a point value to view scoring criteria, solutions, and/or examples and to score the response.

| 0 | 1 ✓ |
|---|---|

The response states that there will be a surplus at a wage of $114, calculates the surplus as 54 beauticians, and shows the work.

$\text{Surplus} = \text{Quantity Supplied} - \text{Quantity Demanded} = 180 - 126 \ = 54$

**Part D**

Select a point value to view scoring criteria, solutions, and/or examples and to score the response.

| 0 | 1 ✓ |
|---|---|

The response states that the perfectly competitive wage would be $96 and explains that the wage would be determined by the intersection of the supply curve and the marginal revenue product curve.

**Part E**

Select a point value to view scoring criteria, solutions, and/or examples and to score the response.

| 0 | 1 ✓ |
|---|---|

The response states that the firm should hire fewer beauticians and explains that the ratio of the marginal product of labor to the wage (0.5) is less than the ratio of the marginal product of capital to the rental price of capital (1), or the firm can get more output for their money by hiring fewer workers, or

$\frac{MP_{Labor}}{P_{Labor}} = \frac{MP_{Capital}}{P_{Capital}}$

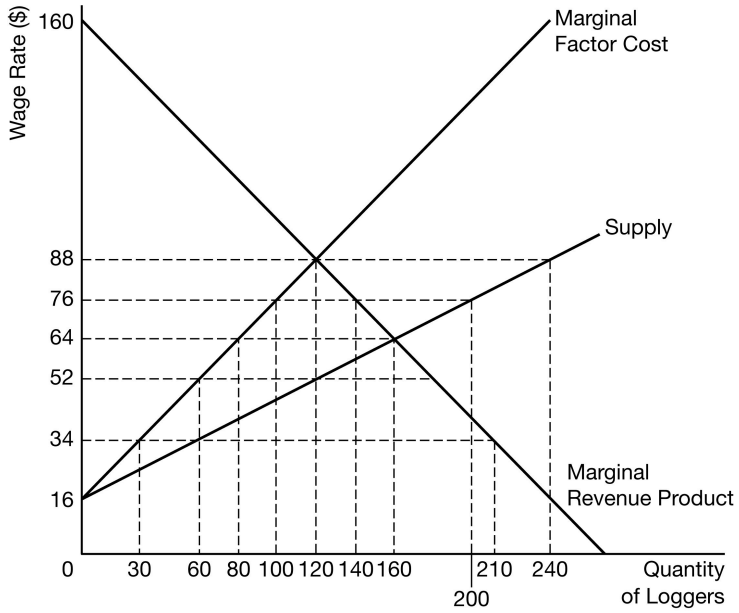
$\frac{30}{60} > \frac{20}{20}$

$0.5 < 1$

# Unit 2 Practice Questions - ALL

**310.** ***Include correctly labeled diagrams, if useful or required, in explaining your answers. A correctly labeled diagram must have all axes and curves clearly labeled and must show directional changes. If the question prompts you to "Calculate," you must show how you arrived at your final answer.***

*Larry's Logging is the only logging company in a small remote town, and Larry's Logging is the only employer of loggers in the area. The graph below shows the market for loggers with the marginal factor (resource) cost curve, the labor supply curve, and the marginal revenue product curve.*




(a) If the wage rate is $34, state whether there will be a shortage or a surplus of loggers and calculate its size. Show your work.

(b) Identify the profit-maximizing number of loggers that Larry's Logging will hire. Explain using the labeling on the graph.

(c) Identify the profit-maximizing wage rate that Larry's Logging will pay its loggers. Explain using the labeling on the graph.

(d) Assume that the market for loggers becomes perfectly competitive. What wage rate would Larry's Logging pay its loggers if it were a perfectly competitive firm? Explain using the labeling on the graph.

(e) Assume instead that Larry's Logging uses both labor and capital in its production of logs. The marginal product of the last unit of labor hired is 150 logs per hour and the marginal product of the last unit of capital rented is 200 logs per hour; the hourly wage rate for labor is $30 and the hourly rental price for capital is 50. To minimize the cost of producing its current level of output, should Larry's Logging hire more loggers, fewer loggers, or the same number of loggers? Explain using marginal analysis.

Respond to all parts of the question.

**Part A**

Select a point value to view scoring criteria, solutions, and/or examples and to score the response.

| 0 | 1 ✓ |
|---|---|

The response states that there will be a shortage at a wage of $34, calculates the shortage as 150 loggers, and shows the work.

$\text{Shortage} = \text{Quantity Demanded} - \text{Quantity Supplied} = 210 - 60 = 150$

**Part B**

Select a point value to view scoring criteria, solutions, and/or examples and to score the response.

| 0 | 1 ✓ |
|---|---|

The response identifies the profit-maximizing number of loggers as 120 and explains that at that quantity, the marginal revenue product is equal to the marginal factor cost.

**Part C**

Select a point value to view scoring criteria, solutions, and/or examples and to score the response.

# Unit 2 Practice Questions - ALL

| 0 | 1 ✓ |
|---|---|

The response identifies the profit-maximizing wage the firm will pay as $52 and explains that this is the wage on the supply curve at the profit-maximizing number of loggers (where marginal revenue product is equal to marginal factor cost).

**Part D**

Select a point value to view scoring criteria, solutions, and/or examples and to score the response.

| 0 | 1 ✓ |
|---|---|

The response states that the perfectly competitive wage would be $64 and explains that the wage would be determined by the intersection of the supply curve and the marginal revenue product curve.

**Part E**

Select a point value to view scoring criteria, solutions, and/or examples and to score the response.

| 0 | 1 ✓ |
|---|---|

The response states that the firm should hire more loggers and explains that the ratio of the marginal product of labor to the wage (5) is greater than the ratio of the marginal product of capital to the rental price of capital (4), or the firm can get more output for their money by hiring more workers, or

$$\frac{MP_{Labor}}{P_{Labor}} > \frac{MP_{Capital}}{P_{Capital}}$$

$$\frac{150}{30} > \frac{200}{50}$$

$5 > 4$

**311.** Last year 17 million tons of beans were sold for $300 per ton. This year 17 million tons of beans were sold for 285 per ton. Which of the following changes in demand and supply could have caused this outcome?

(A)

| Demand | Supply |
|---|---|
| Increase | Increase |

(B)

| Demand | Supply |
|---|---|
| Increase | Decrease |

(C) ✓

| Demand | Supply |
|---|---|
| Decrease | Increase |

(D)

| Demand | Supply |
|---|---|
| Decrease | Decrease |

(E)

| Demand | Supply |
|---|---|
| Increase | No change |

# Unit 2 Practice Questions - ALL

**312.** Leather and beef are jointly produced such that an increase in the production of one results in an equal increase in the production of the other. An increase in the demand for leather will most likely cause

(A) a decrease in the price of leather

(B) a decrease in the price of beef ✓

(C) a decrease in the equilibrium quantity of beef sold

(D) an increase in the demand for beef in the short run

(E) an increase in the supply of leather

**313.** Assume the market for a good is in equilibrium. An increase in the market supply of the good will result in

(A) a shortage at the original price of the good, which causes the market price to decrease

(B) a shortage at the original price of the good, which causes the market price to increase

(C) a surplus at the original price of the good, which causes the market price to decrease ✓

(D) a surplus at the original price of the good, which causes the market price to increase

(E) neither a surplus nor a shortage

**Answer C**

Correct. An increase in supply will create a surplus at the original price, because quantity supplied will exceed quantity demanded at the original price, resulting in a downward pressure on prices, which causes the market price to decrease.

**314.**

| Price | Quantity Demanded (units) | Quantity Supplied (units) |
|---|---|---|
| $1 | 500 | 100 |
| $2 | 400 | 200 |
| $3 | 300 | 300 |
| $4 | 200 | 300 |
| $5 | 100 | 500 |

The table provided shows the market demand and supply schedules for wheat. Which of the following is true?

(A) At a price of $1, there is excess supply of wheat and the price will decrease.

(B) At a price of $2, there is excess demand for wheat and the price will decrease.

(C) At a price of $3, there is excess demand for wheat and the price will increase.

(D) At a price of $4, there is excess supply of wheat and the price will decrease. ✓

(E) At a price of $5, there is excess demand for wheat and the price will increase.

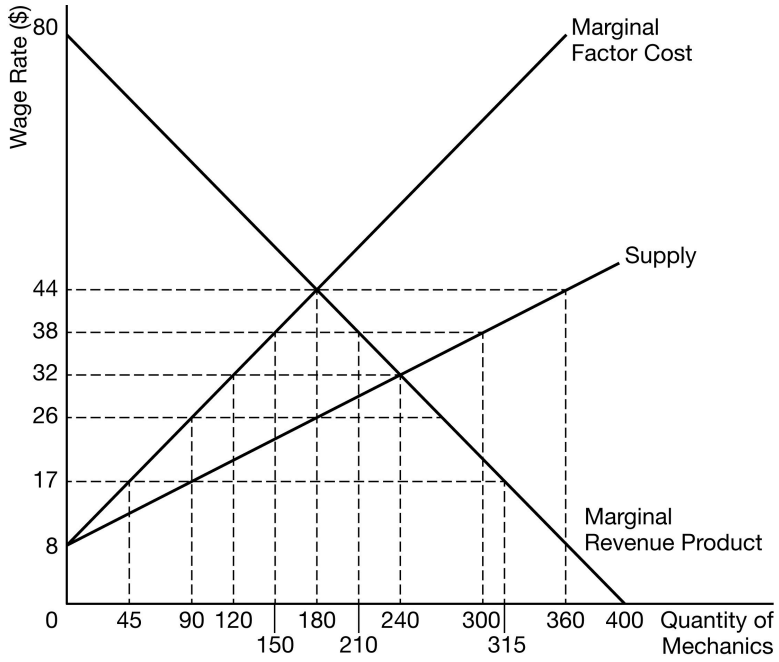
**Answer D**

Correct. At the price of $4, there is a surplus or excess supply, as the quantity supplied exceeds the quantity demanded $(300 > 200)$, which causes the price to decrease.

# Unit 2 Practice Questions - ALL

**315. Include correctly labeled diagrams, if useful or required, in explaining your answers. A correctly labeled diagram must have all axes and curves clearly labeled and must show directional changes. If the question prompts you to "Calculate," you must show how you arrived at your final answer.**

Molly's Motorcycles is the only motorcycle repair shop in a small remote town, and Molly's Motorcycles is the only employer of mechanics in the area. The graph below shows the market for mechanics with the marginal factor (resource) cost curve, the labor supply curve, and the marginal revenue product curve.




(a) Identify the profit-maximizing number of mechanics that Molly's Motorcycles will hire. Explain using the labeling on the graph.

(b) Identify the profit-maximizing wage rate that Molly's Motorcycles will pay its mechanics. Explain using the labeling on the graph.

(c) If the wage rate is $38, state whether there will be a shortage or a surplus of mechanics and calculate its size. Show your work.

(d) If the marginal product of mechanics decreases, what will happen to the quantity of services provided by Molly's Motorcycles? Explain.

(e) Assume instead that Molly's Motorcycles uses both labor and capital in providing its services. The marginal product of the last unit of labor hired is 100 repairs per day and the marginal product of the last unit of capital rented is 60 repairs per day; the daily wage rate for labor is $20 and the daily rental price for capital is 30. To minimize the cost of providing its current level of service, should Molly's Motorcycles rent more capital, less capital, or the same amount of capital? Explain using marginal analysis.

Respond to all parts of the question.

**Part A**

Select a point value to view scoring criteria, solutions, and/or examples and to score the response.

| 0 | 1 ✓ |
|---|---|

The response identifies 180 as the profit-maximizing number of beauticians and explains that at that quantity, the marginal revenue product is equal to the marginal factor cost.

**Part B**

Select a point value to view scoring criteria, solutions, and/or examples and to score the response.

| 0 | 1 ✓ |
|---|---|

The response identifies $26 as the wage the firm will pay and explains that this is the wage on the supply curve at the profit-maximizing number of workers (where marginal revenue product is equal to marginal factor cost).

**Part C**

# Unit 2 Practice Questions - ALL

Select a point value to view scoring criteria, solutions, and/or examples and to score the response.

| 0 | 1 ✓ |
|---|---|

The response states that there will be a surplus at a wage of $38, calculates the surplus as 90 mechanics, and shows the work.

$\text{Surplus} = \text{Quantity Supplied} - \text{Quantity Demanded} = 300 - 210 = 90$

**Part D**

Select a point value to view scoring criteria, solutions, and/or examples and to score the response.

| 0 | 1 ✓ |
|---|---|

The response states that the quantity of services provided will decrease and explains that as each worker's extra output (marginal product) decreases, the firm's MRP decreases, decreasing the quantity of labor hired as well as the quantity of output produced by the firm.

**Part E**

Select a point value to view scoring criteria, solutions, and/or examples and to score the response.

| 0 | 1 ✓ |
|---|---|

The response states that the firm should rent less capital and explains that the ratio of the marginal product of labor to the wage (5) is greater than the ratio of the marginal product of capital to the rental price of capital (2), or the firm can get more output for their money by renting less capital, or

$\frac{MP_{Labor}}{P_{Labor}} > \frac{MP_{Capital}}{P_{Capital}}$

$\frac{100}{20} > \frac{60}{30}$

$5 > 2$

# Unit 2 Practice Questions - ALL

**316.** Include correctly labeled diagrams, if useful or required, in explaining your answers. A correctly labeled diagram must have all axes and curves clearly labeled and must show directional changes. If the question prompts you to "Calculate," you must show how you arrived at your final answer.

As the only gas station in a small town, FillUp has a local monopoly on the sale of gasoline. FillUp is currently earning positive economic profit.

(a) Draw a correctly labeled graph for FillUp and show each of the following.

(i) FillUp's profit-maximizing quantity, labeled $\mathrm{Q_F}$

(ii) FillUp's profit-maximizing price, labeled $\mathrm{P_F}$

(iii) The deadweight loss associated with FillUp's profit-maximizing quantity, shaded completely

(iv) The maximum quantity at which FillUp would earn zero economic profit, labeled $\mathrm{Q_Z}$

(b) Assume that FillUp's fixed costs increase because of a new lease on its property and FillUp stays in business. Will each of the following increase, decrease, or remain unchanged at FillUp's profit-maximizing quantity?

(i) The deadweight loss. Explain.

(ii) FillUp's economic profit

(c) Assume the demand for gasoline decreases because people bike to work more often.

(i) What must be true for FillUp to continue to operate in the short run?

(ii) What happens to FillUp's profit-maximizing quantity and price in the short run assuming the firm continues to operate?

Respond to all parts of the question.

**Part A**

Select a point value to view scoring criteria, solutions, and/or examples and to score the response.

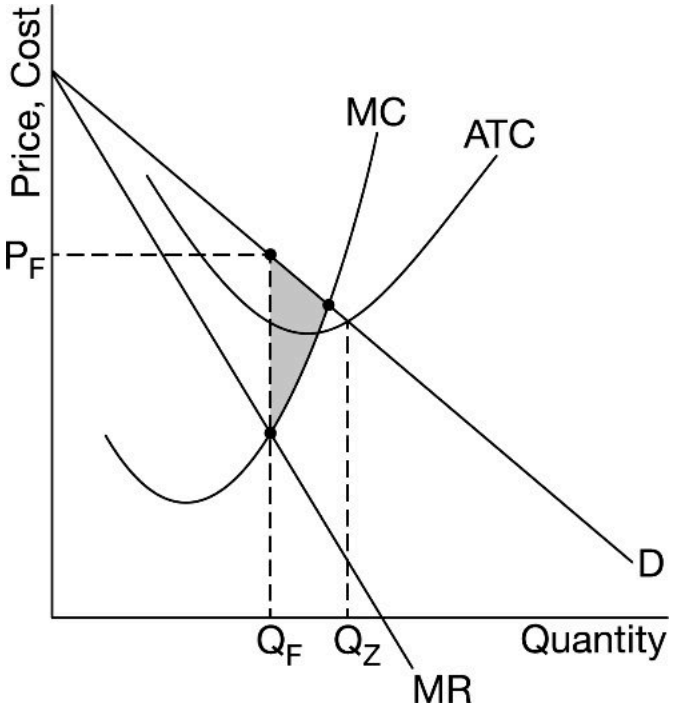
| 0 | 1 | 2 | 3 | 4 | 5 ✓ |
|---|---|---|---|---|---|

The response accurately includes five of the criteria below.

- ☐ A correctly labeled graph of the monopoly showing downward-sloping demand ($\mathrm{D}$) and marginal revenue ($\mathrm{MR}$) curves with the $\mathrm{MR}$ curve below the demand curve.
- ☐ The profit-maximizing quantity, labeled $\mathrm{Q_F}$, where $\mathrm{MR} = \mathrm{MC}$
- ☐ The profit-maximizing price, labeled $\mathrm{P_F}$, from the demand curve at $\mathrm{Q_F}$ and above the average total cost curve ($\mathrm{ATC}$).
- ☐ The area representing the deadweight loss, completely shaded.
- ☐ The quantity where economic profits are zero, labeled $\mathrm{Q_Z}$, where $\mathrm{ATC}$ intersects the demand curve.

Solution

# Unit 2 Practice Questions - ALL




**Part B**

Select a point value to view scoring criteria, solutions, and/or examples and to score the response.

| 0 | 1 | 2 ✓ |
|---|---|---|

The response accurately includes both criteria below.

- ☐ States that the deadweight loss will remain unchanged and for explaining that changes in fixed costs do not change the profit-maximizing quantity of the firm, or fixed costs do not affect MC.
- ☐ States that FillUp's economic profit will decrease.

**Part C**

Select a point value to view scoring criteria, solutions, and/or examples and to score the response.

| 0 | 1 | 2 ✓ |
|---|---|---|

The response accurately includes both criteria below.

- ☐ States that the price must be greater than AVC at the profit-maximizing level of output.
- ☐ States that the profit-maximizing quantity and price will both decrease.

**317.** Which of the following would most likely result in a decrease in the equilibrium price of oranges?

(A) The weather during this orange-growing season is not as good as it was last year.
(B) The price of apples, a substitute for oranges, is higher this year than last year.
(C) New studies suggest that oranges contain traces of cancer-causing substances due to pesticide residue. ✓
(D) A tree-killing fungus spreads through orange orchards across the country.
(E) Firms in the orange industry launch an effective advertising campaign.

# Unit 2 Practice Questions - ALL

**318.** Royal Bolts is a profit-maximizing firm in a perfectly competitive market earning positive economic profit. Which of the following will cause an increase in both the firm's profit and the number of units it produces in the short run?

(A) The imposition of a per-unit tax on producers

(B) An increase in the price of a substitute in consumption ✓

(C) An increase in consumers' incomes if the product is an inferior good

(D) A decrease in the rent for the factory, a fixed input

(E) A decrease in the expected future price of the product by consumers

**Answer B**

Correct. An increase in the price of a substitute in consumption would increase the demand for the good Royal Bolts produces, since it would become relatively cheaper. The increase in demand would result in an increase in price and marginal revenue. To maximize profit, Royal Bolts would increase its production until marginal revenue equals marginal cost. As a result, the difference between price and average total cost would increase, increasing the firm's profit, and the firm would produce more units of output in the short run.

# Unit 2 Practice Questions - ALL

**319.** Peaches and nectarines are substitute goods, and both are produced under conditions of competitive long-run equilibrium.

a. Joyce, a producer in the peach industry, discovers a technological breakthrough that only reduces the cost of producing peaches. Explain how the change in technology will affect each of the following for Joyce.

i. Quantity of peaches produced

ii. Price of peaches

iii. Short-run profits

b. Now assume that all other peach-producing firms adopt the new technology. Explain how the adoption of the new technology will affect each of the following in the peach-producing industry.

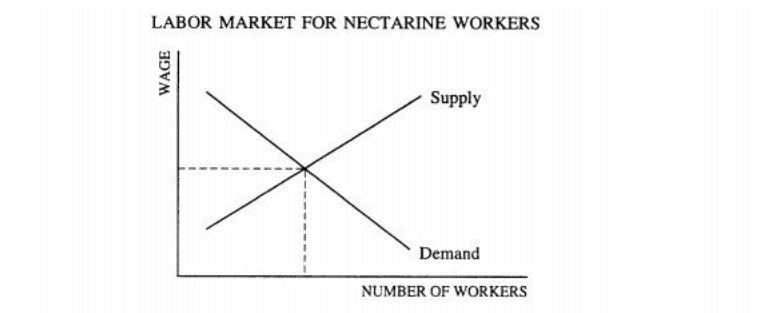
i. Price of peaches

ii. Quantity of peaches produced

c. This new technology is not applicable to the production of nectarines. Explain how the changes that occurred in the peach industry will affect each of the following in the nectarine industry.

i. Price of nectarines

ii. Quantity of nectarines




d. The graph above depicts the supply and demand curves for workers in the nectarine industry before the technological breakthrough in the peach industry.

Explain how the technological breakthrough in the peach industry will affect each of the following in the labor market for nectarine workers.

i. Wage rate for nectarine workers

ii. Number of nectarine workers hired

Respond to all parts of the question.

**Part A**

**3 Points**

- **1 -** An explanation that costs have decreased, shifting the MC cost curve and resulting in a new profiting maximizing higher level of output.
- **1 -** Price remains constant because of perfect competition. Thus, Joyce cannot affect the market price.
- **1 -** The student must show convincingly that short-run profits increase. One of the following explanations is acceptable:
  - Price is constant and costs decrease.
  - Costs have decreased while total revenue has increased due to constant price and increased output.
  - If the student has indicated about that the price has decreased, then the student must argue that average costs decrease more than the price decreases (or equivalent) to get an increase in Joyce's profits.

| 0 | 1 | 2 | 3 ✓ |
|---|---|---|---|

The student earns all of the following points:

- **1 -** An explanation that costs have decreased, shifting the MC cost curve and resulting in a new profiting maximizing higher level of output.
- **1 -** Price remains constant because of perfect competition. Thus, Joyce cannot affect the market price.
- **1 -** The student must show convincingly that short-run profits increase. One of the following explanations is acceptable:

# Unit 2 Practice Questions - ALL

- Price is constant and costs decrease.
- Costs have decreased while total revenue has increased due to constant price and increased output.
- If the student has indicated about that the price has decreased, then the student must argue that average costs decrease more than the price decreases (or equivalent) to get an increase in Joyce's profits.

**Part B**

**2 Points**

- **1 -** Indicating that the industry supply curve shifts to the right; graphically or verbally.
- **1 -** Equilibrium price and quantity effects. A 1/2 point for price decrease and 1/2 point for quantity increase.

| 0 | 1 | 2 ✓ |
|---|---|---|

The student earns all of the following points:

- **1 -** Indicating that the industry supply curve shifts to the right; graphically or verbally.
- **1 -** Equilibrium price and quantity effects. A 1/2 point for price decrease and 1/2 point for quantity increase.

**Part C**

**2 Points**

- **1 -** Decrease in demand resulting from the price decrease in peaches and the fact that peaches and nectarines are substitutes. The reason must be given.
- **1/2 -** Decrease in nectarine equilibrium price.
- **1/2 -** Decrease in nectarine equilibrium quantity.

| 0 | 1 | 2 ✓ |
|---|---|---|

The student earns all of the following points:

- **1 -** Decrease in demand resulting from the price decrease in peaches and the fact that peaches and nectarines are substitutes. The reason must be given.
- **1/2 -** Decrease in nectarine equilibrium price.
- **1/2 -** Decrease in nectarine equilibrium quantity.

**Part D**

**2 Points**

- **1 -** Leftward shift in demand curve due to decrease in $MRP_1$ or, possibly $VMP_L$; the student must link the price change in the product market to the demand change in the labor market.
- **1/2 -** Wage rate declines.
- **1/2 -** Quantity of labor hired decreases.

| 0 | 1 | 2 ✓ |
|---|---|---|

The student earns all of the following points:

- **1 -** Leftward shift in demand curve due to decrease in $MRP_1$ or, possibly $VMP_L$; the student must link the price change in the product market to the demand change in the labor market.
- **1/2 -** Wage rate declines.
- **1/2 -** Quantity of labor hired decreases.

# Unit 2 Practice Questions - ALL

**320.** Removing a binding price floor on milk will affect the quantity of milk demanded and the quantity of milk supplied in the market in which of the following ways?

(A) There will be no change to quantity demanded, and quantity supplied will decrease.
(B) Quantity demanded will decrease, and quantity supplied will decrease.
(C) Quantity demanded will decrease, and quantity supplied will increase.
(D) Quantity demanded will increase, and there will be no change to quantity supplied.
(E) Quantity demanded will increase, and quantity supplied will decrease. ✓

**Answer E**

Correct. Binding price floors are prices set above the equilibrium market price; removing a binding price floor will increase the quantity demanded for milk and decrease the quantity supplied of milk.

**321.** A decrease in the supply of pencils results in which of the following?

(A) A surplus of pencils in the market
(B) An increase in the demand for erasers, a complement in consumption
(C) An increase in the quantity demanded of pencils
(D) A decrease in the consumer surplus of pencil buyers ✓
(E) A decrease in the demand for pencils

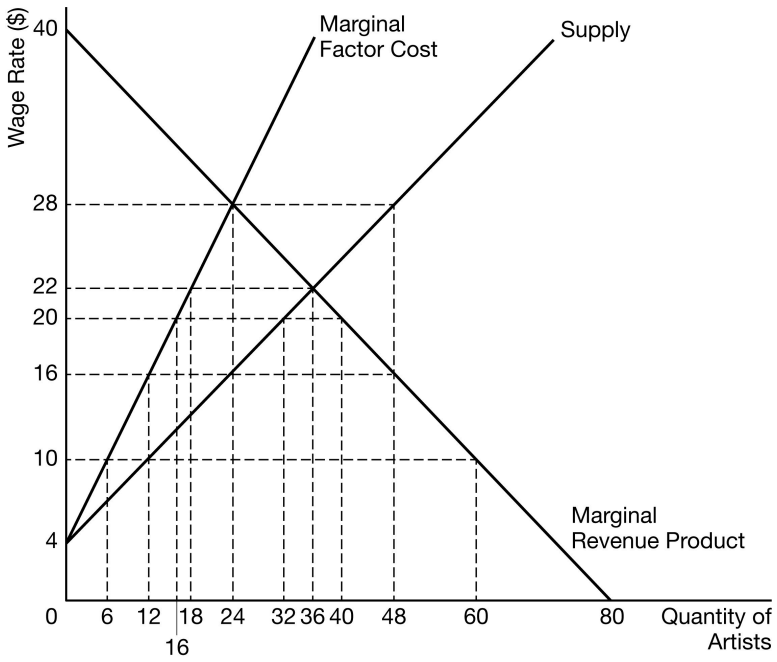
**Answer D**

Correct. A decrease in the supply of pencils will increase the equilibrium price of pencils and decrease the equilibrium quantity of pencils. Since consumer surplus represents the difference between the maximum price consumers are willing to pay and the equilibrium price consumers must pay (for all units consumed), this increase in equilibrium price and decrease in equilibrium quantity must reduce consumer surplus.

# Unit 2 Practice Questions - ALL

**322.** ***Include correctly labeled diagrams, if useful or required, in explaining your answers. A correctly labeled diagram must have all axes and curves clearly labeled and must show directional changes. If the question prompts you to "Calculate," you must show how you arrived at your final answer.***

Tandy's Art is the only art studio and workshop in a small remote town, and Tandy's Art is the only employer of artists in the area. The graph below shows the market for artists with the marginal factor (resource) cost curve, the labor supply curve, and the marginal revenue product curve.




(a) Identify the profit-maximizing number of artists that Tandy's Art will hire. Explain using the labeling on the graph.

(b) Identify the profit-maximizing wage rate that Tandy's Art will pay its artists. Explain using the labeling on the graph.

(c) If the wage rate is $10, state whether there will be a shortage or a surplus of artists and calculate its size. Show your work.

(d) Assume that the market for artists becomes perfectly competitive. What wage rate would Tandy's Art pay its artists if it were a perfectly competitive firm? Explain using labeling on the graph.

(e) Assume instead that Tandy's Art uses both labor and capital in its production of artwork. The marginal product of the last unit of labor hired is 90 pieces of artwork per day and the marginal product of the last unit of capital rented is 80 pieces of artwork per day; the daily wage rate for labor is $10 and the daily rental price for capital is 20. To minimize the cost of providing its current level of output, should Tandy's Art hire more artists, fewer artists, or the same number of artists? Explain using marginal analysis.

Respond to all parts of the question.

**Part A**

Select a point value to view scoring criteria, solutions, and/or examples and to score the response.

| 0 | 1 ✓ |
|---|---|

The response identifies the profit-maximizing number of artists as 24 and explains that at that quantity, the marginal revenue product is equal to the marginal factor cost.

**Part B**

Select a point value to view scoring criteria, solutions, and/or examples and to score the response.

| 0 | 1 ✓ |
|---|---|

The response identifies the wage the firm will pay as $16 and explains that this is the wage on the supply curve at the profit-maximizing number of workers (where marginal revenue product is equal to marginal factor cost).

**Part C**

Select a point value to view scoring criteria, solutions, and/or examples and to score the response.

# Unit 2 Practice Questions - ALL

| 0 | 1 ✓ |
|---|---|

The response states that there will be a shortage at a wage of $10, calculates the shortage as 48 artists, and shows the work.

$\text{Shortage} = \text{Quantity Demanded} - \text{Quantity Supplied} = 60 - 12 = 48$

**Part D**

Select a point value to view scoring criteria, solutions, and/or examples and to score the response.

| 0 | 1 ✓ |
|---|---|

The response states that the perfectly competitive wage would be $22 and explains that the wage would be determined by the intersection of the supply curve and the marginal revenue product curve.

**Part E**

Select a point value to view scoring criteria, solutions, and/or examples and to score the response.

| 0 | 1 ✓ |
|---|---|

The response states that the firm should hire more artists and explains that the ratio of the marginal product of labor to the wage (9) is greater than the ratio of the marginal product of capital to the rental price of capital (4), or the firm can get more output for its money by hiring more workers and renting less capital, or

$\frac{MP_{Labor}}{P_{Labor}} > \frac{MP_{Capital}}{P_{Capital}}$

$\frac{90}{10} > \frac{80}{20}$

$9 > 4$

**323.** The American Heart Association has just issued a report warning consumers about the negative health effects of eating beef. Which of the following changes in the beef market is most likely to occur as a result?

(A) The supply curve will shift to the left, increasing the price of beef.

(B) The demand curve will shift to the left, decreasing the price of beef. ✓

(C) The demand curve will shift to the right, increasing the price of beef.

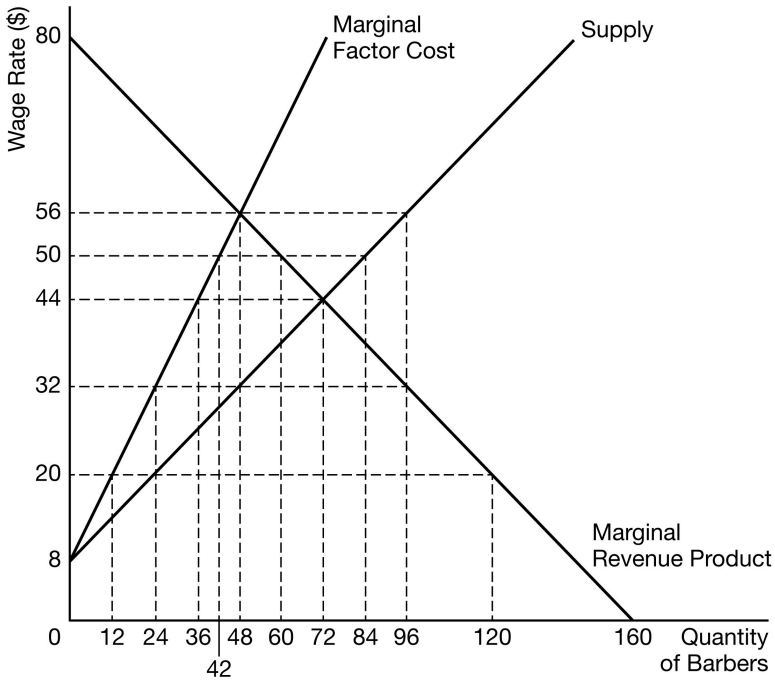
(D) Neither the supply nor demand curve will shift; only quantity will increase as price decreases.

(E) Neither the supply nor demand curve will shift; only quantity will decrease as prices increases.

# Unit 2 Practice Questions - ALL

**324. Include correctly labeled diagrams, if useful or required, in explaining your answers. A correctly labeled diagram must have all axes and curves clearly labeled and must show directional changes. If the question prompts you to "Calculate," you must show how you arrived at your final answer.**

Tom's Trims is the only barber shop in a small remote town, and Tom's Trims is the only employer of barbers in the area. The graph below shows the market for barbers with the marginal factor (resource) cost curve, the labor supply curve, and the marginal revenue product curve.




(a) If the wage rate is $20, state whether there will be a shortage or a surplus of barbers and calculate its size. Show your work.

(b) Identify the profit-maximizing number of barbers that Tom's Trims will hire. Explain using the labeling on the graph.

(c) Identify the profit-maximizing wage rate that Tom's Trims will pay its barbers. Explain using the labeling on the graph.

(d) Assume that the market for barbers becomes perfectly competitive. What wage rate would Tom's Trims pay its barbers if it were a perfectly competitive firm? Explain using labeling on the graph.

(e) Assume instead that Tom's Trims uses both labor and capital in providing its services. The marginal product of the last unit of labor hired is 80 cuts per day and the marginal product of the last unit of capital rented is 120 cuts per day; the daily wage rate for labor is $20 and the daily rental price for capital is $40. To minimize the cost of producing its current level of output, should Tom's Trims hire more barbers, fewer barbers, or the same number of barbers? Explain using marginal analysis.

Respond to all parts of the question.

**Part A**

Select a point value to view scoring criteria, solutions, and/or examples and to score the response.

| 0 | 1 ✓ |
|---|---|

The response states that there will be a shortage at a wage of $20, calculates the shortage as 96 barbers, and shows the work.

$\text{Shortage} = \text{Quantity Demanded} - \text{Quantity Supplied} = 120 - 24 = 96$

**Part B**

Select a point value to view scoring criteria, solutions, and/or examples and to score the response.

| 0 | 1 ✓ |
|---|---|

The response identifies the profit-maximizing number of barbers as 48 and explains that at that quantity, the marginal revenue product is equal to the marginal factor cost.

**Part C**

# Unit 2 Practice Questions - ALL

Select a point value to view scoring criteria, solutions, and/or examples and to score the response.

| 0 | 1 ✓ |
|---|---|

The response identifies the wage the firm will pay as $32and explains that this is the wage on the supply curve at the profit-maximizing number of workers (where marginal revenue product is equal to marginal factor cost).

**Part D**

Select a point value to view scoring criteria, solutions, and/or examples and to score the response.

| 0 | 1 ✓ |
|---|---|

The response states that the perfectly competitive wage would be $44 and explains that the wage would be determined by the intersection of the supply curve and the marginal revenue product curve.

**Part E**

Select a point value to view scoring criteria, solutions, and/or examples and to score the response.

| 0 | 1 ✓ |
|---|---|

The response states that the firm should hire more barbers and explains that the ratio of the marginal product of labor to the wage (4) is greater than the ratio of the marginal product of capital to the rental price of capital (3), or the firm can get more output for their money by hiring more workers, or

$$\frac{MP_{Labor}}{P_{Labor}} > \frac{MP_{Capital}}{P_{Capital}}$$

$$\frac{80}{20} > \frac{120}{40}$$

$$4 > 3$$

**325.** A decrease in the cost of land devoted for building townhouses will most likely cause which of the following?

(A) The supply curve of townhouses will shift to the left.
(B) The demand curve for townhouses will become more elastic.
(C) The price of townhouses will increase.
(D) The supply of townhouses will increase. ✓
(E) There will be less incentive to build townhouses.

**Answer D**

Correct. A decrease in the cost of land represents a decrease in input costs for developers and will therefore cause the supply of townhouses to increase.

# Unit 2 Practice Questions - ALL

**326.** Which of the following changes in the demand for and the supply of a good would necessarily lead to a decrease in the equilibrium quantity of the good in the market in the short run?

(A)

| Demand | Supply |
|---|---|
| Increase | Decrease |

(B)

| Demand | Supply |
|---|---|
| Increase | No change |

(C)

| Demand | Supply |
|---|---|
| Decrease | Increase |

(D) ✓

| Demand | Supply |
|---|---|
| Decrease | Decrease |

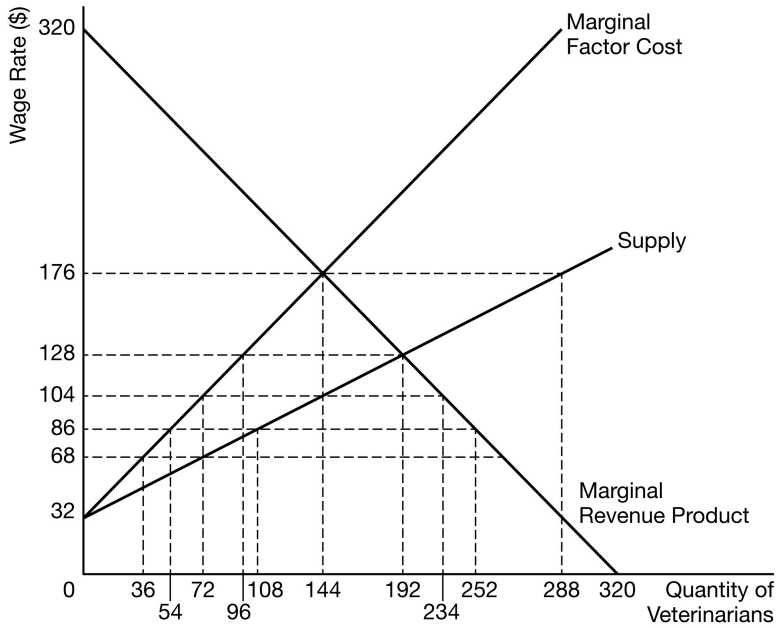
(E)

| Demand | Supply |
|---|---|
| No change | Increase |

# Unit 2 Practice Questions - ALL

**327. Include correctly labeled diagrams, if useful or required, in explaining your answers. A correctly labeled diagram must have all axes and curves clearly labeled and must show directional changes. If the question prompts you to "Calculate," you must show how you arrived at your final answer.**

Vijay's Veterinary is the only animal care facility in a small remote town, and Vijay's Veterinary is the only employer of veterinarians in the area. The graph below shows the market for veterinarians with the marginal factor (resource) cost curve, the labor supply curve, and the marginal revenue product curve.




(a) Identify the profit-maximizing number of veterinarians that Vijay's Veterinary will hire. Explain using the labeling on the graph.

(b) Identify the profit-maximizing wage rate that Vijay's Veterinary will pay its veterinarians. Explain using the labeling on the graph.

(c) If the wage rate is $86, state whether there will be a shortage or a surplus of veterinarians and calculate its size. Show your work.

(d) If the marginal product of veterinarians decreases, what will happen to the quantity of services provided by Vijay's Veterinary? Explain.

(e) Assume instead that Vijay's Veterinary uses both labor and capital in providing its services. The marginal product of the last unit of labor hired is 50 patients per day and the marginal product of the last unit of capital rented is 10 patients per day; the daily wage rate for labor is $100 and the daily rental price for capital is 40. To minimize the cost of providing its current level of service, should Vijay's Veterinary rent more capital, less capital, or the same amount of capital? Explain using marginal analysis.

Respond to all parts of the question.

**Part A**

Select a point value to view scoring criteria, solutions, and/or examples and to score the response.

| 0 | 1 ✓ |
|---|---|

The response identifies the profit-maximizing number of workers as 144 and explains that at that quantity, the marginal revenue product is equal to the marginal factor cost.

**Part B**

Select a point value to view scoring criteria, solutions, and/or examples and to score the response.

| 0 | 1 ✓ |
|---|---|

The response identifies the wage the firm will pay as $104 and explains that this is the wage on the supply curve at the profit-maximizing number of workers (where marginal revenue product is equal to marginal factor cost).

**Part C**

Select a point value to view scoring criteria, solutions, and/or examples and to score the response.

# Unit 2 Practice Questions - ALL

| 0 | 1 ✓ |
|---|---|

The response states that there will be a shortage at a wage of $86, calculates the shortage as 144 veterinarians, and shows the work.

$\text{Shortage} = \text{Quantity Demanded} - \text{Quantity Supplied} = 252 - 108 = 144$

**Part D**

Select a point value to view scoring criteria, solutions, and/or examples and to score the response.

| 0 | 1 ✓ |
|---|---|

The response states that the quantity of services provided will decrease and explains that as each worker's extra output (marginal product) decreases, the firm's MRP decreases, decreasing the quantity of labor hired as well as the quantity of output produced by the firm.

**Part E**

Select a point value to view scoring criteria, solutions, and/or examples and to score the response.

| 0 | 1 ✓ |
|---|---|

The response states that the firm should rent less capital and explains that the ratio of the marginal product of labor to the wage (0.5) is greater than the ratio of the marginal product of capital to the rental price of capital (0.25), or the firm can get more output for their money by hiring more workers and renting less capital, or

$\frac{MP_{Labor}}{P_{Labor}} > \frac{MP_{Capital}}{P_{Capital}}$

$\frac{50}{100} > \frac{10}{40}$

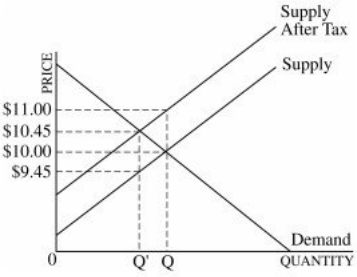
$0.5 > 0.25$

**328.** After the government imposed a $0.20 per gallon tax on gasoline, the price of a gallon of gasoline increased from $1.00 to $1.15. Which of the following statements is true?

(A) Consumers bear the entire burden of the tax, since producers can pass the tax along to consumers.
(B) Consumers and producers share the tax burden equally.
(C) Consumers bear most, but not all, of the tax burden. ✓
(D) Producers bear the entire burden of the tax, since the tax was levied on producers, not consumers.
(E) There is no tax burden, since gasoline is a normal good.

# Unit 2 Practice Questions - ALL

**The following questions are based on the diagram below, which shows the effect of a unit tax placed on a good.**




**329.** According to the diagram, what is the dollar amount of the unit tax?

(A) $0.00
(B) $0.45
(C) $0.55
(D) $1.00 ✓
(E) $1.45

**330.** What is the price paid by consumers and the net price received by producers after the tax is paid?

(A)

| Paid by Consumers | Received by Producers |
|---|---|
| $11.00 | $10.45 |

(B)

| Paid by Consumers | Received by Producers |
|---|---|
| $11.00 | $10.00 |

(C)

| Paid by Consumers | Received by Producers |
|---|---|
| $10.45 | $10.00 |

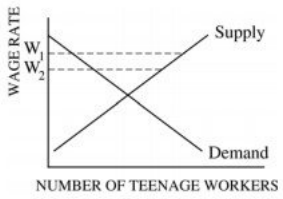
(D) ✓

| Paid by Consumers | Received by Producers |
|---|---|
| $10.45 | $9.45 |

(E)

| Paid by Consumers | Received by Producers |
|---|---|
| $10.00 | $9.45 |

**331.**

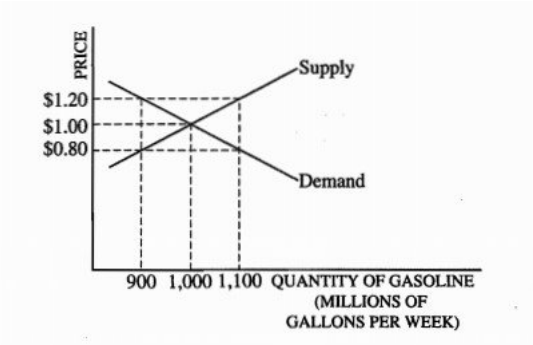



The graph above illustrates the labor market for teenage workers. The current minimum wage for all workers is $W_1$. If Congress introduces a sub-minimum wage, $W_2$ that applies only to teenagers, what is the most likely effect on teenage employment?

(A) Teenage employment will increase because firms will want to hire more teenagers at $W_2$ than at $W_1$. ✓
(B) Teenage employment will increase because more teenagers will want to work at $W_2$ than at $W_1$.
(C) Teenage employment will decrease because fewer teenagers will want to work at $W_2$ than at $W_1$.
(D) Teenage employment will decrease because firms will want to hire fewer teenagers at $W_2$ than at $W_1$.
(E) Teenage employment will stay the same because the market-clearing wage is lower than $W_1$ and $W_2$.

# Unit 2 Practice Questions - ALL

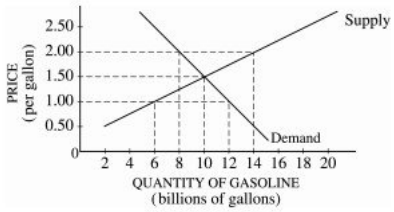
**332.**




The graph above shows the supply and demand curves for gasoline. Which of the following will occur if the government establishes a price ceiling of $1.20 per gallon?

(A) A shortage of 900 million gallons
(B) A shortage of 200 million gallons
(C) A shortage of 100 million gallons
(D) A surplus of 100 million gallons
(E) Neither a surplus nor a shortage ✓

**333.**




In the market depicted in the diagram above, if the government imposes a price ceiling of $1.00 per gallon on gasoline, which of the following will result?

(A) A surplus of 6 billion gallons
(B) A shortage of 6 billion gallons ✓
(C) A surplus of 12 billion gallons
(D) A shortage of 12 billion gallons
(E) Neither a surplus nor a shortage, because the price ceiling would not be effective

**334.** An effective minimum wage policy in a competitive market will increase unemployment and increase the total earnings of labor only if the demand for labor is

(A) relatively inelastic ✓
(B) relatively elastic
(C) unit elastic
(D) greater than the supply
(E) positively related to the wage rate

**335.** An increase in which of the following will most likely result in a long-run surplus of a product?

(A) The number of suppliers of the product
(B) A price is set by law above the equilibrium price ✓
(C) The demand for the product
(D) The costs of resources used to produce the product
(E) The future expected price of the product

**336.** Following a prolonged power outage, the price of flashlights normally increases significantly. If cities had passed laws prohibiting price increases for flashlights, during power outages such laws would most likely

(A) make flashlights more available
(B) create a shortage of flashlights ✓
(C) shift the demand curve for flashlights to the right
(D) shift the supply curve for flashlights to the left
(E) have no effect on the availability of flashlights

# Unit 2 Practice Questions - ALL

**337.** Assume that both the supply of and the demand for a good are relatively price elastic. The imposition of a per-unit excise tax on the sale of the good would cause the equilibrium price and quantity to change in which of the following ways?

(A)

| Price | Quantity |
|---|---|
| Increase | Increase |

(B)

| Price | Quantity |
|---|---|
| Increase | No change |

(C) ✓

| Price | Quantity |
|---|---|
| Increase | Decrease |

(D)

| Price | Quantity |
|---|---|
| Decrease | No change |

(E)

| Price | Quantity |
|---|---|
| Decrease | Decrease |

**338.** Assume that the current market equilibrium price for milk is $2.80 per gallon and that 5 million gallons are sold per day. If the government sets a price ceiling of $2.00 per gallon, which of the following is true?

(A) The demand for milk will increase.
(B) The supply of milk will decrease.
(C) There will be an excess supply of milk in the market.
(D) More than 5 million gallons of milk will be sold.
(E) Less than 5 million gallons of milk will be sold. ✓

**339.** Assume that the government imposes an effective minimum wage in a perfectly competitive labor market. What will happen to employment and total wage payments?

(A)

| Employment | Total Wage Payments |
|---|---|
| Decrease | Increase |

(B)

| Employment | Total Wage Payments |
|---|---|
| Decrease | Decrease |

(C) ✓

| Employment | Total Wage Payments |
|---|---|
| Decrease | Indeterminate |

(D)

| Employment | Total Wage Payments |
|---|---|
| Increase | Increase |

(E)

| Employment | Total Wage Payments |
|---|---|
| Increase | Indeterminate |

# Unit 2 Practice Questions - ALL

**340.** Assume that the government imposes an excise tax on the consumption of a good. The tax will have the least impact on the market equilibrium quantity for which of the following combinations of the price elasticities of demand and supply?

(A)

| Absolute Value of Elasticity of Demand | Elasticity of Supply |
|---|---|
| 4 | 4 |

(B)

| Absolute Value of Elasticity of Demand | Elasticity of Supply |
|---|---|
| 4 | 0.50 |

(C)

| Absolute Value of Elasticity of Demand | Elasticity of Supply |
|---|---|
| 1 | 1 |

(D)

| Absolute Value of Elasticity of Demand | Elasticity of Supply |
|---|---|
| 0.50 | 4 |

(E) ✓

| Absolute Value of Elasticity of Demand | Elasticity of Supply |
|---|---|
| 0.50 | 0.50 |

**341.** Assume that the price elasticity of demand for good X is constant and equal to -0.5 and the price elasticity of demand for good Y is constant and equal to -2. Assume that goods X and Y have identical upward-sloping elastic supply curves. If a per-unit excise tax of the same amount is levied on good X and on good Y, which of the following would be true?

(A) The percentage decrease in the quantity of good X demanded would be greater than the percentage decrease in the quantity of good Y demanded.
(B) The tax share paid by consumers of good X would be relatively higher than that paid by consumers of good Y. ✓
(C) The tax share paid by consumers of good Y would be relatively higher than that paid by consumers of good X.
(D) The tax share paid by sellers of good Y would be relatively lower than that paid by sellers of good X.
(E) The tax share paid by sellers of goods X and Y would be the same.

**342.** Assume that the supply of corn is relatively price inelastic, while the demand for corn is relatively price elastic. If the government imposes a per-unit excise tax on the production of corn, the incidence of the tax will fall

(A) entirely on buyers
(B) more on buyers than on sellers
(C) entirely on sellers
(D) more on sellers than on buyers ✓
(E) equally on both buyers and sellers

**343.** Assuming a downward-sloping demand curve and an upward-sloping supply curve, which of the following will occur as a result of an increase in the sales tax on a good?

(A) Supply will increase.
(B) Demand will increase.
(C) Quantity supplied will increase.
(D) Quantity demanded will decrease. ✓
(E) The price paid by consumers will decrease.

**344.** If the government imposes a binding price ceiling in the gasoline market, which of the following will occur in the short run?

(A) The demand for gasoline will increase.
(B) The demand for gasoline will decrease.
(C) The quantity demanded of gasoline will increase. ✓
(D) All individuals in the gasoline market will be better off.
(E) All individuals in the gasoline market will be worse off.

**Answer C**

Correct. A binding price ceiling sets the price below the market equilibrium price, causing the quantity demanded to increase.

# Unit 2 Practice Questions - ALL

**345.** The equilibrium price for a good with a vertical supply curve and a downward-sloping demand curve is $20. If a binding price floor is set, which of the following will occur?

(A) There will be a shortage of the good.

(B) The sum of consumer and producer surpluses will decrease. ✓

(C) The equilibrium price of the good will decrease.

(D) The quantity sold of the good will remain unchanged.

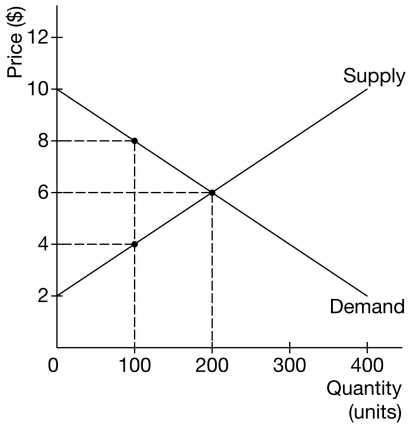
(E) Demand for substitutes for the good will decrease.

**Answer B**

Correct. The price floor raises the price above the equilibrium price of $20, reducing the quantity demanded while supply remains constant. The quantity demanded will fall, but the quantity supplied will not change. The market will not achieve equilibrium, resulting in a decrease in both the consumer and producer surpluses.

# Unit 2 Practice Questions - ALL

**346.**




Assume that the government imposes a $4 per-unit tax on sellers of a good in the market described by the graph above.

What are the price paid by buyers, the after-tax price received by sellers, and the deadweight loss?

(A)

| Price Paid by Buyers | Price Received by Sellers | Deadweight Loss |
|---|---|---|
| $8 | $6 | $100 |

(B) ✓

| Price Paid by Buyers | Price Received by Sellers | Deadweight Loss |
|---|---|---|
| $8 | $4 | $200 |

(C)

| Price Paid by Buyers | Price Received by Sellers | Deadweight Loss |
|---|---|---|
| $6 | $6 | $0 |

(D)

| Price Paid by Buyers | Price Received by Sellers | Deadweight Loss |
|---|---|---|
| $4 | $8 | $100 |

(E)

| Price Paid by Buyers | Price Received by Sellers | Deadweight Loss |
|---|---|---|
| $4 | $8 | $200 |

**Answer B**

Correct. The tax creates a wedge between the price paid by buyers and the price received by sellers. The per-unit tax shifts the supply curve to the left by the amount of the tax, raising the price to $8 and decreasing the quantity exchanged to 100 units. Thus, the price paid by buyers rises to $8, and the price received by sellers falls to $4. The deadweight loss is given by the area of the triangle between the price of $8 and $4 and the quantity of 100 units and 200 units. That is, the deadweight loss is equal to $((\$8 - \$4) \times (200 - 100))/2 = \$200$.

# Unit 2 Practice Questions - ALL

**347.** Assume that the market for a good is characterized by a downward-sloping demand curve and an upward-sloping supply curve and the market is in equilibrium at a price of $20 and a quantity of 100 units. After the government imposes a $5 per-unit excise tax on the good, the price that buyers pay for the good increases by $3. Which of the following are possible values for the government tax revenue and deadweight loss in the market?

(A) Tax revenue is $200, deadweight loss 0$

(B) Tax revenue is $300, deadweight loss 0$

(C) Tax revenue is $300, deadweight loss 100$ ✓

(D) Tax revenue is $500, deadweight loss 200$

(E) Tax revenue is $500, deadweight loss 300$

**Answer C**

Correct. The answer can be found through the process of elimination. We can rule out Options A and B because there is always a deadweight loss unless either demand or supply is perfectly inelastic. If demand were perfectly inelastic, the buyer price would have increased by the amount of the tax. If supply were perfectly inelastic, the buyer price would not have increased at all. Since buyer price increased by $3, we know that neither supply nor demand is perfectly inelastic, which rules out Options "A" and "B". We can also rule out Options "D" and "E". The tax collected is 500 if the equilibrium quantity did not change after the tax was implemented. The only case in which the equilibrium quantity would not change after the tax is implemented is if either demand or supply is perfectly inelastic. But we know that neither demand nor supply is perfectly inelastic. Therefore, the government revenue must increase by something less than $500. The only option in which there is some deadweight loss and the tax revenue collected by the government is less than $500 is Option "C".

**348.** If the market demand for a good is inelastic and the supply is elastic, which of the following is true when there is an increase in sales tax?

(A) Consumers will bear most of the burden of the tax. ✓

(B) Producers will bear all of the burden of the tax.

(C) Producers will bear most of the burden of the tax or risk losing sales.

(D) Both consumers and producers will share the burden of the tax equally.

(E) The price of the good will not change.

**349.** The use of environmentally friendly drinking straws has benefits to society beyond those enjoyed by their direct users. As a result, a government with the goal of maximizing total economic surplus in society would have an incentive to

(A) allow the free market to determine the equilibrium price and quantity of environmentally friendly drinking straws

(B) implement a binding price ceiling on environmentally friendly drinking straws

(C) implement a binding price floor on environmentally friendly drinking straws

(D) implement a per-unit tax on consumers of environmentally friendly drinking straws

(E) implement a per-unit subsidy to consumers of environmentally friendly drinking straws ✓

**Answer E**

Correct. Since the use of environmentally friendly straws benefits not only the individual but society as well, they generate a positive externality in consumption. In cases where positive externalities are generated in consumption, the good is underconsumed in private markets from the standpoint of maximizing total economic surplus; thus, implementing a per-unit subsidy to consumers would increase consumption towards the point where marginal social benefit equals marginal social cost, therefore increasing total economic surplus towards its maximum.

**350.** If the government eliminates an effective minimum wage in a competitive labor market, which of the following is true?

(A) Minimum wage workers will experience no change in hourly pay.

(B) Minimum wage workers will experience a decrease in hourly pay. ✓

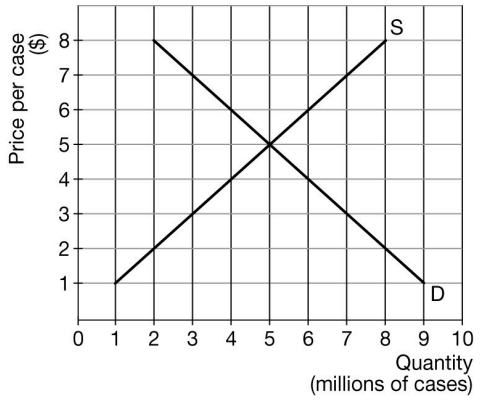
(C) The number of people employed will decrease because people do not want to work for low wages.

(D) There will be an excess demand for workers.

(E) There will be an increase in the supply of workers.

# Unit 2 Practice Questions - ALL

**351. Include correctly labeled diagrams, if useful or required, in explaining your answers. A correctly labeled diagram must have all axes and curves clearly labeled and must show directional changes. If the question prompts you to "Calculate," you must show how you arrived at your final answer.**




Assume that sugar-based soft drinks are produced in a market shown on the graph above. Answer the following questions based on the information given in the graph.

(a) To reduce the consumption of sugary soft drinks, suppose the government imposes a $2 per-unit sales tax on soft drinks.

(i) Will the price of soft drinks increase by the full amount of the per-unit sales tax? Explain.

(ii) Calculate the tax revenue the government can collect from the sale of soft drinks. Show your work.

(iii) Will the consumer surplus increase, decrease, or stay the same after the per-unit sales tax?

(iv) Calculate the deadweight loss created by the per-unit sales tax. Show your work.

(b) Suppose that instead of imposing the per-unit sales tax, the government sets a price ceiling of $7. Identify the quantity of soft drinks that will be exchanged in the market as a result of the price ceiling. Explain.

Respond to all parts of the question.

**Part (a)**

Select a point value to view scoring criteria, solutions, and/or examples and to score the response.

All four criteria in part (a) are achieved independently.

| 0 | 1 | 2 | 3 | 4 ✓ |
|---|---|---|---|---|

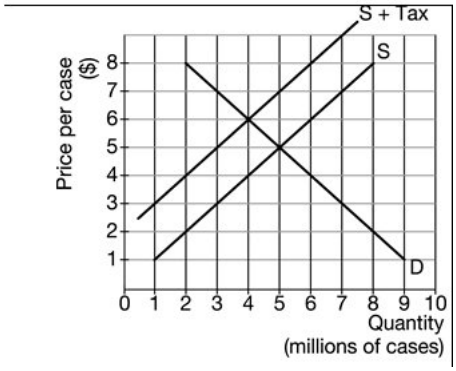
The response accurately includes all four of the criteria below.

- ☐ States the price will not increase by the full amount of the per-unit sales tax and explains that the per-unit sales tax will shift the supply curve to the left (or upward) by the full amount of the tax, but the equilibrium price with the tax will only rise from $5 to 6$.
- ☐ Calculates the tax revenue as $8 million and shows appropriate work as : $(T \times Q) = (\$2 \times 4 \text{ million}) = \$8 \text{ million}$
- ☐ States that the consumer surplus will decrease.
- ☐ Calculates the deadweight loss as $1 million and shows appropriate work as : $\frac{1}{2}(\$6 - \$4)(1 \text{ million}) = \$1 \text{ million}$

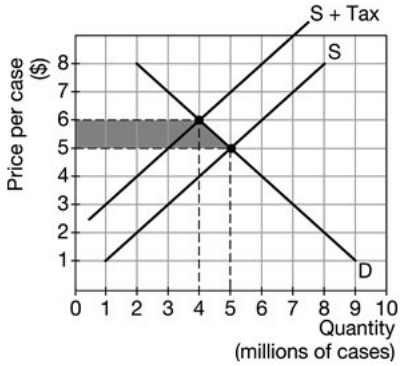
**Supporting graphs (for reference only; not required for a correct response):**

The graph below demonstrates the effect of the per-unit sales tax on the new equilibrium price of soft drinks.

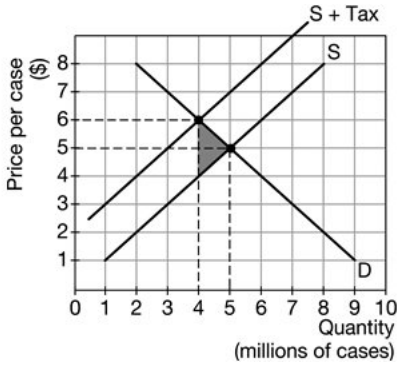
# Unit 2 Practice Questions - ALL




The graph below illustrates the area of consumer surplus before and after the tax is imposed.




The graph below illustrates the area of deadweight loss.




**Part (b)**

elect a point value to view scoring criteria, solutions, and/or examples and to score the response.

**General Considerations**

Both the identification of the quantity as 5 million cases of soft drinks and the explanation are required to receive the 1 point.

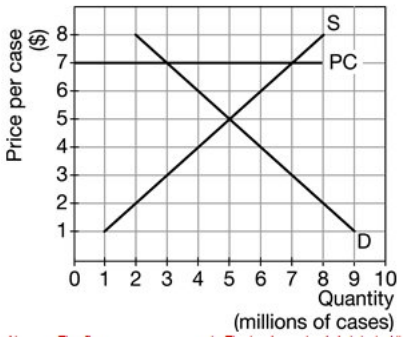
The response should recognize that the price ceiling is not effective or binding because the price ceiling is set above the equilibrium price.

| 0 | 1 ✓ |
|---|---|

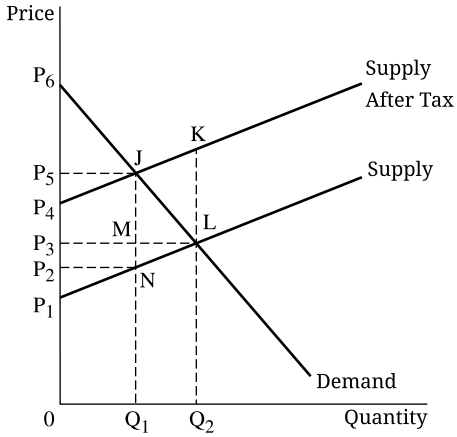
The response states that the quantity exchanged in the market is 5 million cases of soft drinks (see graph below) and explains that the price ceiling is not effective or binding because the price ceiling is set above the equilibrium price.

(The graph below illustrating the price ceiling is provided as reference and may be used as part of the explanation but is not required.)

# Unit 2 Practice Questions - ALL




**352.**




The graph provided shows the imposition of a per-unit tax on producers. Which areas represent government tax revenue, producer surplus, and deadweight loss after the imposition of the tax?

(A) The government tax revenue is $P_5P_3MJ$; The producer surplus is $P_3P_1L$; The deadweight loss is JNL.

(B) The government tax revenue is $P_5P_2NJ$; The producer surplus is $P_6P_5J$; The deadweight loss is $P_4P_5J$.

(C) The government tax revenue is JNL; The producer surplus is $P_3P_1NM$; The deadweight loss is MLN.

(D) The government tax revenue is $P_5P_2NJ$; The producer surplus is $P_2P_1N$; The deadweight loss is JNL. ✓

(E) The government tax revenue is $P_5P_3MJ$; The producer surplus is $P_3P_1L$; The deadweight loss is JML.

**Answer D**

Correct. The per-unit tax creates a wedge between the price paid by consumers and the price received by producers, resulting in a higher equilibrium price ($P_5$) and a lower equilibrium quantity ($Q_1$). Government tax revenue is the difference between the price consumers pay ($P_5$) and the price producers receive ($P_2$) multiplied by the new equilibrium quantity exchanged after the tax ($Q_1$), which is $(P_5 - P_2) \times Q_1$ or area $P_5P_2NJ$. Producer surplus after the tax is the area of the triangle above the supply curve and below the price received by the producers $P_2$, which is area $P_2P_1N$. Deadweight loss is the sum of the lost consumer surplus (area JML) and the lost producer surplus (area NML) that were not offset by the government because of the decrease in the equilibrium quantity from $Q_2$ to $Q_1$ after the tax, which is area JNL.

**353.** If the imposition of a per-unit tax on a good reduces the total consumer surplus by more than the reduction of total producer surplus in a competitive market, then which of the following must be true?

(A) The price sellers receive decreases by more than the amount of the tax.

(B) The price buyers pay increases by more than the amount of the tax.

(C) Demand is less elastic than supply. ✓

(D) Demand is more elastic than supply.

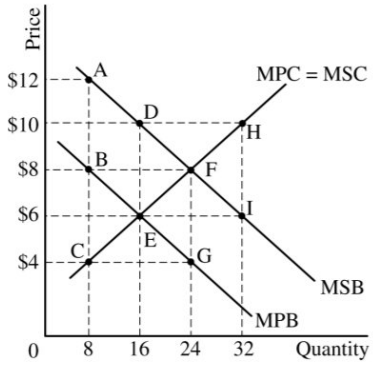
(E) Demand and supply are both unit elastic.

**Answer C**

Correct. If the demand is less elastic than the supply, then the burden of the tax lies more on the consumer than on the seller. As a result, consumer surplus will decrease by more than the decrease in producer surplus.

# Unit 2 Practice Questions - ALL

**354.** Modern-day word processing software gives consumers the ability to create and save documents in different file formats that can then be accessed by multiple computer operating systems. The graph below depicts a perfectly competitive market for word processing software. In the graph, MSB is the marginal social benefit, MPB is the marginal private benefit, MPC is the marginal private cost, and MSC is the marginal social cost.




a. Identify the type of market failure illustrated by the graph. Explain.

b. Using the numbers on the graph, identify the market equilibrium price and quantity.

c. Using the labeling on the graph, identify the area representing the deadweight loss at the quantity identified in part (b).

d. Suppose the government is considering granting a subsidy to correct the market failure. What is the dollar value of the per-unit subsidy that would achieve the socially optimal quantity?

e. Suppose the government does not grant the subsidy and instead imposes a price floor at $8.

i. How many units will consumers and producers exchange at the price floor?

ii. Does the price floor correct the market failure? Explain.

Respond to all parts of the question.

**Part A**

**1 point(s) maximum**

**1 point(s) earned for:** stating positive externality, and for explaining that either marginal social benefit is greater than marginal private benefit (MSB>MPB) or the equilibrium quantity is less than the socially optimal quantity.

| | ✓ |
|---|---|
| 0 | 1 |

The student response earns one of the following points:

**1 point(s) maximum**

**1 point(s) earned for:** stating positive externality, and for explaining that either marginal social benefit is greater than marginal private benefit (MSB>MPB) or the equilibrium quantity is less than the socially optimal quantity.

**Part B**

**1 point(s) maximum**

**1 point(s) earned for:** identifying the market equilibrium price as $6 and the market equilibrium quantity as 16 units.

| | ✓ |
|---|---|
| 0 | 1 |

The student response earns one of the following points:

**1 point(s) maximum**

**1 point(s) earned for:** identifying the market equilibrium price as $6 and the market equilibrium quantity as 16 units.

**Part C**

# Unit 2 Practice Questions - ALL

**1 point(s) maximum**

**1 point(s) earned for:** identifying the area of the deadweight loss as DEF.

| 0 | 1 ✓ |
|---|---|

The student response earns one of the following points:

**1 point(s) maximum**

**1 point(s) earned for:** identifying the area of the deadweight loss as DEF.v

**Part D**

**1 point(s) maximum**

**1 point(s) earned for:** identifying $4 as the dollar value of the per-unit subsidy.

| 0 | 1 ✓ |
|---|---|

The student response earns one of the following points:

**1 point(s) maximum**

**1 point(s) earned for:** identifying $4 as the dollar value of the per-unit subsidy.

**Part E**

**2 point(s) maximum**

**1 point(s) earned for:** identifying 8 units.

**1 point(s) earned for:** stating no and explaining with one of the following reasons:

- The quantity exchanged in the market will be less than the socially optimal quantity.
- MSB>MSC at a quantity of 8 units.
- Deadweight loss increased after the price floor.

| 0 | 1 | 2 ✓ |
|---|---|---|

The student response earns two of the following points:

**2 point(s) maximum**

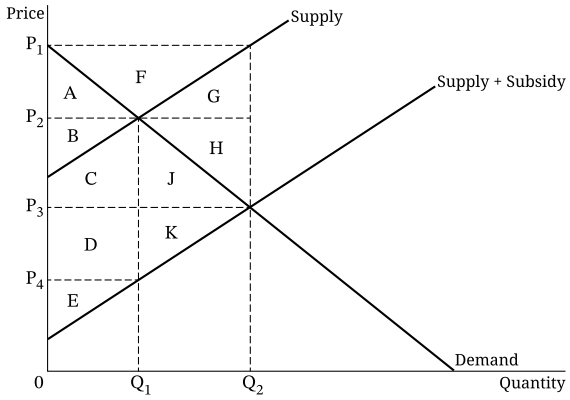
**1 point(s) earned for:** identifying 8 units.

**1 point(s) earned for:** stating no and explaining with one of the following reasons:

- The quantity exchanged in the market will be less than the socially optimal quantity.
- MSB>MSC at a quantity of 8 units.
- Deadweight loss increased after the price floor.

# Unit 2 Practice Questions - ALL

The graph shows a per-unit subsidy being granted to producers of Good X. The letters on the graph represent enclosed areas.




**355.** The change in consumer surplus as a result of the per-unit subsidy granted to producers of Good X is equal to

(A) zero
(B) Area A
(C) Area J
(D) Areas J and K
(E) Areas B, C, and J ✓

**Answer E**

Correct. Consumer surplus can be represented by the area below the demand curve, which reflects consumers' willingness to pay and above the equilibrium price, for all units exchanged. Without the per-unit subsidy, consumer surplus in the market for Good X is represented by area A. With the per-unit subsidy, the equilibrium price decreases from $P_2$ to $P_3$ ,and the equilibrium quantity increases from $Q_1$ to $Q_2$, thus the area of consumer surplus increases to include areas B, C, and J.

**356.** What is the total cost of the per-unit subsidy to the government?

(A) Areas B, C, and J
(B) Areas B, C, and D
(C) Areas A, F, and G
(D) Areas A, B, C, F, G, H, and J ✓
(E) Areas A, B, C, D, E, J, and K

**Answer D**

Correct. The total cost of the per-unit subsidy to the government can be found by taking the value of the per-unit subsidy, which is given by the difference between the Supply and Supply + Subsidy curves ($P_1$−$P_3$), and multiplying by the number of units exchanged in the market following the granting of the per-unit subsidy ($Q_2$). The rectangle formed by the areas A, B, C, J, H, G, and F is equal to ($P_1$−$P_3$) × ($Q_2$), which represents the total cost of the per-unit subsidy to the government.

# Unit 2 Practice Questions - ALL

**357.** If the minimum wage for teenagers increased to a rate higher than their market equilibrium wage, what would be the effect on their wage and employment?

(A)

| Wage | Employment |
|---|---|
| Increase | No effect |

(B)

| Wage | Employment |
|---|---|
| Increase | Increase |

(C) ✓

| Wage | Employment |
|---|---|
| Increase | Decrease |

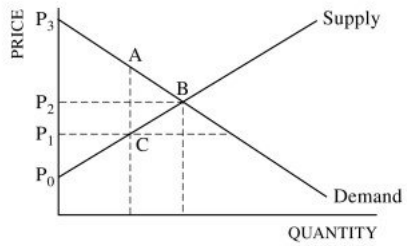
(D)

| Wage | Employment |
|---|---|
| Decrease | Increase |

(E)

| Wage | Employment |
|---|---|
| Decrease | Decrease |

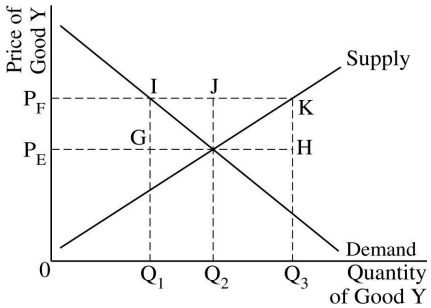
**358.**




In the diagram above, if there is a price ceiling set at $P_1$, consumer surplus will be represented by the area

(A) ABC
(B) $P_2BP_0$
(C) $P_3BP_2$
(D) $P_3ACP_1$ ✓
(E) $P_3BCP_1$

**359.**



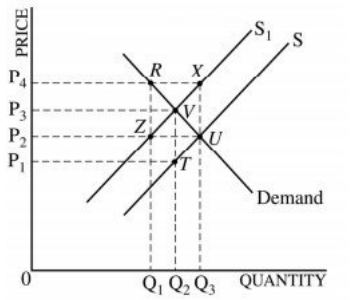

The diagram above depicts the demand and supply curves for good Y. The perfectly competitive market is initially in equilibrium, but the government decides to institute a price floor program by setting the price of good Y at $P_F$ and agrees to purchase all unsold units of good Y from the producers.

The cost of this program to the government is represented by which of the following areas?

(A) $0P_FJQ_2$
(B) $0P_FKQ_3$
(C) GIKH
(D) $Q_1IJQ_2$
(E) $Q_1IKQ_3$ ✓

# Unit 2 Practice Questions - ALL

**360.**




In the graph above, S is the original supply curve, and $S_1$ is the supply curve including an excise tax. The area representing the tax revenue to the government is

(A) $P_1P_3V_T$ ✓
(B) $P_2P_4RZ$
(C) $P_2P_4XU$
(D) $P_2UQ_30$
(E) $P_3VQ_20$

**361.** If a government eliminated an effective price floor in a market, all of the following would occur EXCEPT:

(A) The surplus would be eliminated.
(B) The price would decrease.
(C) The quantity supplied would decrease.
(D) The quantity demanded would increase.
(E) The supply of the good would increase. ✓

**362.** If an effective rent ceiling is eliminated, which of the following is most likely to occur in the rental housing market?

(A) An increase in the demand for housing, resulting in a decrease in the quantity of housing supplied
(B) An increase in rents, resulting in an increase in the quantity of housing supplied ✓
(C) An increase in the demand for housing, resulting in an increase in the quantity of housing demanded
(D) A decrease in rents, resulting in an increase in the quantity of housing supplied
(E) A decrease in the demand for housing, resulting in an increase in the quantity of housing supplied

**363.** If the demand for a good is perfectly price inelastic in the short run and the supply curve is upward sloping, imposing a sales tax on the good will

(A) leave the price paid by consumers unchanged
(B) decrease the after-tax revenues received by suppliers
(C) increase the after-tax revenues received by suppliers
(D) not change the after-tax revenues received by suppliers ✓
(E) not change the total expenditures by consumers on the good

**364.** If the government imposes a per-unit tax on personal computers, consumer surplus in the personal computer market will

(A) decrease, because the price paid by consumers for personal computers will have increased ✓
(B) decrease, because there will be more personal computers on the market
(C) increase, because personal computer manufacturers will pass the tax on to consumers
(D) increase, because consumers will buy more imported personal computers
(E) not change because the demand is unit elastic

# Unit 2 Practice Questions - ALL

**365.**

| Price per Gallon | Quantity Supplied | Quantity Demanded |
|---|---|---|
| $2.50 | 11,000 | 17,000 |
| $2.75 | 12,000 | 16,000 |
| $3.00 | 13,000 | 15,000 |
| $3.25 | 14,000 | 14,000 |
| $3.50 | 15,000 | 13,000 |
| $3.75 | 16,000 | 12,000 |

The table above shows the quantity of gasoline supplied and demanded at various prices in a country. If the government sets a price floor of $2.75 on a gallon of gasoline, what is the price per gallon?

(A) $2.75

(B) $3.00

(C) $3.25 ✓

(D) $3.50

(E) $3.75

**366.** In the rental housing market, what would be the effect of a rent control that was set at the market equilibrium rental price?

(A) It would increase the number of housing units available, creating a surplus.

(B) It would decrease the number of housing units available, creating a shortage.

(C) It would have no impact on the number of housing units available. ✓

(D) It would increase the consumer surplus and decrease the producer surplus.

(E) It would decrease the consumer surplus and increase the producer surplus.

**367.** Suppose that the market for low-wage labor is perfectly competitive and initially in equilibrium. If the government establishes an effective minimum wage, which of the following will occur?

(A) Employment of low-wage workers will decrease and unemployment will increase. ✓

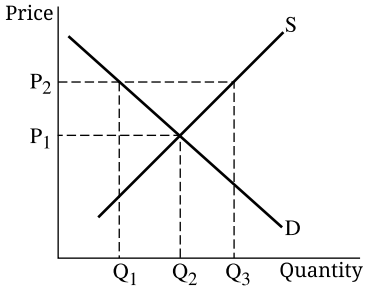
(B) The quantity of low-wage workers supplied will be less than the quantity demanded.

(C) The total wage payment received by all low-wage workers will increase.

(D) Economic efficiency will increase, since firms were paying workers less than the value of their marginal revenue product.

(E) Low-wage workers will be motivated to form a union.

**368.**




The graph shows the market supply (S) and demand (D) curves for a particular product. If the government imposes a price ceiling at $P_2$, which of the following statements is true?

(A) The quantity sold in the market falls from $Q_2$ to $Q_1$.

(B) The quantity sold in the market remains at $Q_2$ because the price ceiling is not binding. ✓

(C) The price ceiling results in a shortage of $(Q_3 - Q_1)$.

(D) The price ceiling results in a surplus of $(Q_3 - Q_1)$.

(E) The price ceiling will benefit sellers at the expense of buyers.

**Answer B**

Correct. For a price ceiling to be binding, it must be set below the equilibrium market price. $P_2$ is set above the equilibrium market price, and therefore it is not binding.

# Unit 2 Practice Questions - ALL

**369.** The labor market in the town of Bazra is perfectly competitive, and 10 percent of the labor force is employed in the clothing industry.

a. Assume that the clothing manufacturers close their plants in Bazra. Using a correctly labeled supply and demand graph, predict the impact that closing these plants will have on each of the following.

i. The wage rate and number of workers employed in Bazra

ii. The number of workers in Bazra looking for work who cannot find employment at the wage rate you identified in (i)

b. After the clothing manufacturers closed their plants in Bazra, the town passes a law that establishes an effective minimum wage. What impact will this minimum wage have on each of the following?

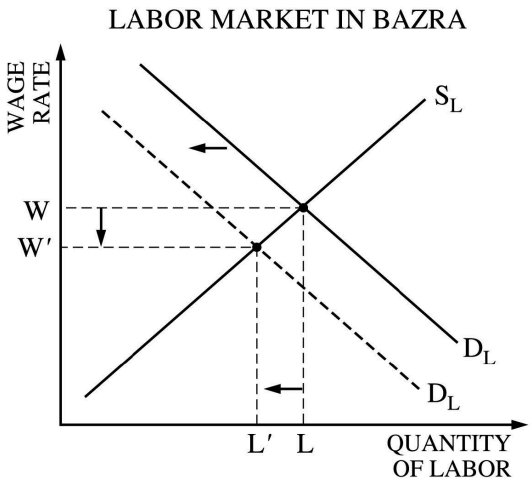
i. The wage rate and number of workers employed in Bazra

ii. The number of workers in Bazra looking for work who cannot find employment

c. Assume that the minimum wage remains in effect and there is an increase in the demand for goods produced in Bazra. What happens to employment in Bazra? Explain why.

Respond to all parts of the question.

**Part A**




1 point: correctly labeled graph without regard to the shift

1 point: shifting the labor demand curve to the left

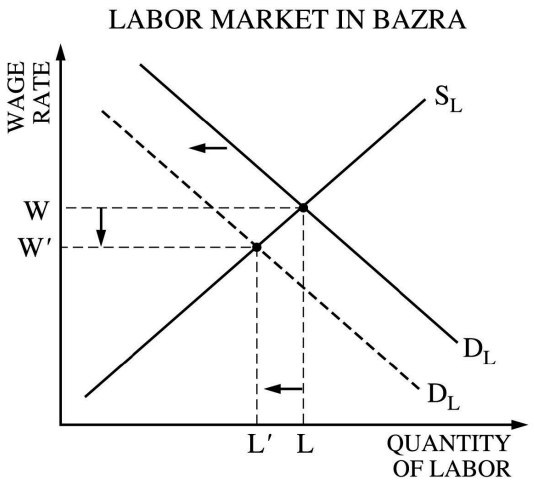
1 point: (i) wage rate and the number employed would fall

1 point: (ii) number of unemployed workers is equal to zero

| 0 | 1 | 2 | 3 | 4 ✓ |
|---|---|---|---|---|

Student receives 4/4 point(s)

# Unit 2 Practice Questions - ALL



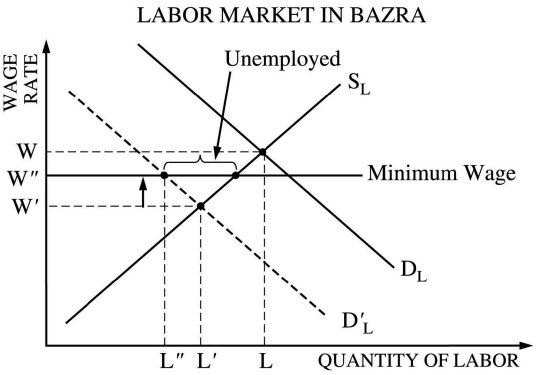

1 point: correctly labeled graph without regard to the shift

1 point: shifting the labor demand curve to the left

1 point: (i) wage rate and the number employed would fall

1 point: (ii) number of unemployed workers is equal to zero

**Part B**




1 point: the wage rate will rise

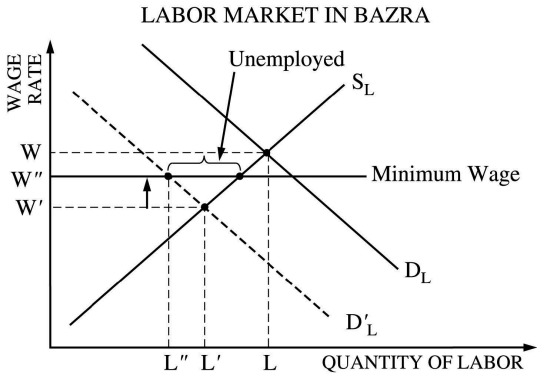
1 point: the number or workers employed will fall

1 point: the number of unemployed workers will rise

| 0 | 1 | 2 | 3 ✓ |
|---|---|---|---|

Student receives 3/3 point(s)

# Unit 2 Practice Questions - ALL




1 point: the wage rate will rise

1 point: the number or workers employed will fall

1 point: the number of unemployed workers will rise

**Part C**

1 point: employment increases

1 point: the increased demand for goods causes the (derived) demand for labor to increase, shifting the the demand curve to the right.

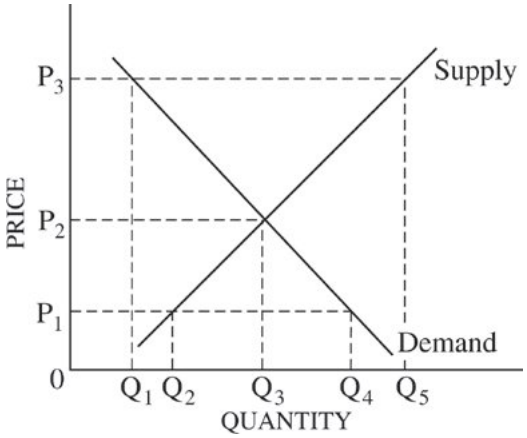
| 0 | 1 | 2 ✓ |
|---|---|---|

Student receives 2/2 point(s)

1 point: employment increases

1 point: the increased demand for goods causes the (derived) demand for labor to increase, shifting the the demand curve to the right.

**370.**




If the market depicted in the diagram above is initially in equilibrium, which of the following will result from the government's setting a price ceiling at $P_3$?

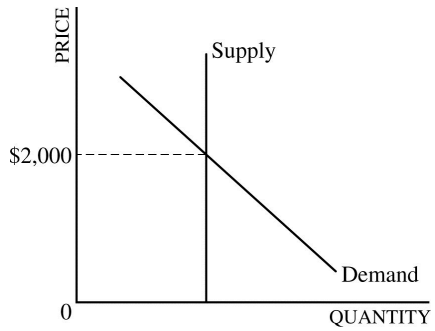
(A) Quantity demanded will exceed quantity supplied.
(B) Quantity supplied will exceed quantity demanded.
(C) Market price will increase.
(D) Market price will be unaffected. ✓
(E) Market price will decrease.

**371.** Which of the following will occur if the government imposes a price ceiling below the equilibrium price of a good?

(A) The quantity sold will exceed the equilibrium quantity.
(B) Firms' total revenues will increase if demand is price elastic.
(C) There will be a shortage in the market. ✓
(D) All firms will shut down, since price is below the equilibrium price.
(E) Price will exceed the marginal cost of producing the last unit sold.

# Unit 2 Practice Questions - ALL

**372.**




The diagram above depicts demand and supply curves in a city's rental housing market. If a price ceiling of $1,000 is imposed on the market, which of the following will occur?

(A) There will be a surplus of rental housing in the city.
(B) The demand curve for housing will shift to the right.
(C) The supply curve for housing will shift to the right.
(D) The quantity of rental housing supplied will decrease.
(E) The quantity of rental housing demanded will increase. ✓

**373.** Assume the government imposes a price floor above the current equilibrium price in the market for a good. Which of the following will occur?

(A) Since the price floor is set above the equilibrium price, nothing will change because the price floor is not binding.
(B) There will be a shortage of the good.
(C) Compared to the equilibrium price, there will be an increase in the quantity exchanged.
(D) There will be an excess supply of the good. ✓
(E) At the quantity sold, the marginal cost of production will exceed the marginal benefit to consumers.

**Answer D**

Correct. A price floor (or minimum price) above the equilibrium price will be binding. There will be a decrease in the quantity demanded and an increase in the quantity supplied, creating a surplus or an excess supply of the good.

**374.** Which of the following policies would result in an increase in the quantity supplied of a good in a market?

(A) Eliminating a per-unit subsidy from sellers
(B) Levying a per-unit tax on sellers
(C) Imposing a binding price floor ✓
(D) Imposing a nonbinding price floor
(E) Imposing a binding price ceiling

**Answer C**

Correct. A binding price floor raises the legal price, giving an incentive to sellers to produce and sell greater quantity. The binding price floor results in a surplus at the binding price.

# Unit 2 Practice Questions - ALL

**375.** An effective price floor placed on a market for a good will have which of the following effects on the quantity purchased by consumers and the consumer surplus?

(A) Quantity will decrease, and consumer surplus will increase
(B) Quantity will decrease, and consumer surplus will decrease ✓
(C) Quantity will increase, and consumer surplus will not change
(D) Quantity will increase, and consumer surplus will increase
(E) Quantity will not change, and consumer surplus will decrease

**Answer B**

Correct. An effective price floor is a price control set above the equilibrium price resulting in a decrease in the quantity purchased by consumers. Consumer surplus is determined by the difference between the price consumers are willing to pay (determined by the demand curve) and the price they must pay (determined by the price floor in this case) across all units consumed. Therefore, as the price increases because of the price floor, the higher price results in a decrease in quantity purchased by consumers and a decrease in consumer surplus.

**376.** Which of the following is true in the market for a certain product if producers consistently are willing to sell more at the going price than consumers are willing to buy?

(A) Demand is highly inelastic
(B) Supply is highly elastic.
(C) The product is inferior.
(D) There is a price ceiling on the product.
(E) There is a price floor on the product. ✓

**377.** Which of the following will occur in the market for bicycles if the government establishes a binding price floor?

(A) A market shortage
(B) A decrease in the demand for bicycles
(C) A decrease in the quantity of bicycles purchased ✓
(D) An increase in consumer surplus
(E) An increase in the equilibrium quantity of bicycles

**Answer C**

Correct. A binding price floor imposed on bicycles will cause the price of bicycles to increase above their equilibrium price; this will decrease the quantity of bicycles purchased according to the law of demand.

**378.** Which of the following is true of a price floor?

(A) The intention of the government in creating the price floor is to assist the producers of the good. ✓
(B) To have an impact in the market for the good, the price floor should be set below the existing market price of the good.
(C) An effective price floor will increase the quantity demanded of the good.
(D) The price floor would tend to create a shortage of the good in the market.
(E) The creation of the price floor would not change the quantity supplied of the good if the supply curve were upward-sloping to the right.

# Unit 2 Practice Questions - ALL

**379.** Suppose that the market supply curve for shoes is upward sloping and the market demand curve is downward sloping. How will the imposition of a sales tax on shoes affect the consumer surplus, the producer surplus, and the total surplus?

(A)

| Consumer Surplus | Producer Surplus | Total Surplus |
|---|---|---|
| Decrease | Decrease | Decrease |

(B)

| Consumer Surplus | Producer Surplus | Total Surplus |
|---|---|---|
| Decrease | Increase | Increase |

(C)

| Consumer Surplus | Producer Surplus | Total Surplus |
|---|---|---|
| Decrease | Increase | Decrease |

(D)

| Consumer Surplus | Producer Surplus | Total Surplus |
|---|---|---|
| Increase | Decrease | Decrease |

(E)

| Consumer Surplus | Producer Surplus | Total Surplus |
|---|---|---|
| Increase | Increase | Increase |

**380.** In which of the following cases would government intervention in a market result in an increase in the quantity sold?

(A) Setting a price ceiling above the equilibrium price
(B) Setting a price ceiling below the equilibrium price
(C) Setting a price floor above the equilibrium price
(D) Levying a per-unit tax on producers
(E) Providing producers of a product with a per unit subsidy

**Answer E**

Correct. A subsidy provided by the government to producers in effect lowers the cost of producing the product, which increases profitability and thereby shifting the market supply curve to the right and increasing equilibrium quantity. Binding price floors and price ceilings will always result in a smaller quantity being bought and sold than the equilibrium quantity.

**381.** Suppose that the demand for soft drinks is price elastic and the supply is price inelastic. If the government imposes a sales tax on soft drinks, which of the following will occur in the short run?

(A) The tax burden will fall equally on both consumers and producers.
(B) The tax burden will fall more on producers.
(C) The tax burden will fall more on consumers.
(D) The percentage increase in the price of soft drinks will be greater than the percentage increase in the quantity demanded.
(E) The percentage decrease in total revenue will be greater than the percentage decrease in the quantity demanded.

# Unit 2 Practice Questions - ALL

**382.** Suppose that the government imposes a per-unit tax on the producers of a good that has a perfectly inelastic demand. After the tax, the price and quantity of the good sold would change in which of the following ways?

(A)

| Price | Quantity |
|---|---|
| Increase | Increase |

(B)

| Price | Quantity |
|---|---|
| Increase | Decrease |

(C) ✓

| Price | Quantity |
|---|---|
| Increase | Not change |

(D)

| Price | Quantity |
|---|---|
| Not change | Increase |

(E)

| Price | Quantity |
|---|---|
| Decrease | Not change |

**383.** Assume that in a competitive equilibrium, 1,000 units are sold at $20 per unit. Following the imposition of a 4.00 per unit tax, the new consumer price is $23, and the new equilibrium quantity is 950 units. What are the values of the tax revenue collected and the deadweight loss?

(A) Tax revenue $4,000$; $Deadweight loss 3,000$

(B) Tax revenue $3,800$; $Deadweight loss 200$

(C) Tax revenue $3,800$; $Deadweight loss 100$ ✓

(D) Tax revenue $3,000$; $Deadweight loss 100$

(E) Tax revenue $200$; $Deadweight loss 200$

**Answer C**

Correct. The tax reduced the quantity sold to 950 units, each of which is subject to a $4.00 per unit tax. The after-tax price sellers receive is $(\$23 - \$4) = \$19$. Tax revenue is $950 \times \$4.00 = \$3{,}800$. Deadweight loss is the area of the triangle of inefficiency or lost surplus: $(\$23 - 19) \times 50 \times .5 = \$100$.

**384.** Following the imposition of a $4 per-unit tax in a competitive market, the seller's after-tax price falls from the original equilibrium price of 12 to $11. Which of the following statements relating to the imposition of the tax is true?

(A) The seller bears 75 percent of the tax burden.

(B) The new after-tax equilibrium price is $16.

(C) There is no deadweight loss from this tax.

(D) The new after-tax equilibrium price is $15. ✓

(E) The buyer bears 25 percent of the tax burden.

**Answer D**

Correct. Following the imposition of the $4 per-unit tax, when the after-tax seller's price fell from 12 to 11, the after-tax equilibrium price must have risen to 15; $(\$11 + \$4)$.

# Unit 2 Practice Questions - ALL

**385.** The fresh fish market is in equilibrium, and the demand is perfectly elastic. The imposition of a per-unit tax on sellers by the government will result in which of the following?

(A) The equilibrium price will increase by the full amount of the tax, and consumers will bear the entire burden of the tax.

(B) The equilibrium price will remain unchanged, and consumers will bear the entire burden of the tax.

(C) The equilibrium price will increase by the full amount of the tax, and suppliers will bear the entire burden of the tax.

(D) The equilibrium price will remain unchanged, and suppliers will bear the entire burden of the tax. ✓

(E) The equilibrium price will increase by the full amount of the tax, and suppliers and consumers will bear the burden of the tax equally.

**Answer D**

Correct. When the demand curve is perfectly elastic, the market price is determined by the demand. The imposition of a per-unit tax will cause the supply curve to shift up by the amount of the per-unit tax, resulting in a decrease in the equilibrium quantity with no change in the equilibrium price, since the demand is perfectly elastic. The share of the tax burden consumers and suppliers incur as the result of a tax is determined by the relative elasticities of supply and demand (whichever group has the lower elasticity bears the greatest burden of the tax).

**386.** A nation engages in international trade with its trading partners and is currently an importer of aluminum. Imposing an import tariff on aluminum will affect the domestic market for aluminum in which of the following ways?

| | Domestic Quantity Supplied | Domestic Consumer Surplus | Domestic Producer Surplus |
|---|---|---|---|
| A | Increase | Decrease | Decrease |
| B | Increase | Decrease | Increase |
| C | No change | Decrease | Decrease |
| D | Decrease | Increase | Decrease |
| E | Decrease | Increase | Increase |

(A) A

(B) B ✓

(C) C

(D) D

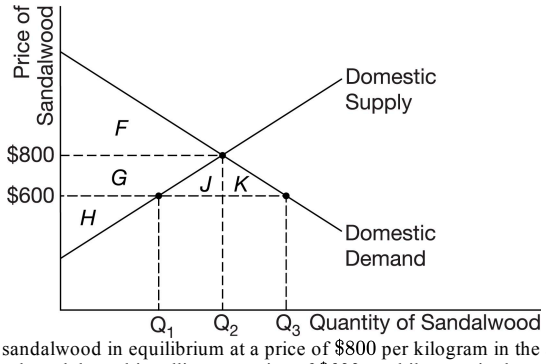
(E) E

**Answer B**

Correct. An import tariff on aluminum will increase the price of imported aluminum, incentivizing domestic firms to increase their quantity supplied. This increase in the price of aluminum will decrease domestic consumer surplus and increase domestic producer surplus.

# Unit 2 Practice Questions - ALL

**387.**




The graph above shows the domestic market for sandalwood in equilibrium at a price of $800 per kilogram in the absence of international trade. Now assume the country begins to engage in international trade, and sandalwood is selling at a price of $600 per kilogram in the world market. Which of the following would most likely result?

(A) The country would increase domestic production to become competitive in the world market.

(B) The country would export sandalwood, and its domestic consumer surplus would increase.

(C) The country would export sandalwood, and its total economic surplus would increase, with the domestic consumer surplus increasing by more than the domestic producer surplus decreases.

(D) The country would import sandalwood, and its total economic surplus would decrease, with both the domestic consumer surplus and the domestic producer surplus decreasing.

(E) The country would import sandalwood, and its total economic surplus would increase, with the domestic consumer surplus increasing by more than the domestic producer surplus decreases. ✓

**Answer E**

Correct. The country would benefit by importing sandalwood from the world market at a price of $600. The consumer surplus before trade is given by area F and the producer surplus is given by area G + H for a total economic surplus of F + G + H. With trade, the total economic surplus would increase by area J + K, with the consumer surplus increasing by area G + J + K, which is more than the decrease in producer surplus, which is area G. Area G is transferred from producers to consumers. Thus, the total economic surplus with trade is given by the sum of all the areas: F + G + H + J + K.

**388.** If the government imposes a tariff on imports of cheese, the price and quantity of imported cheese will most likely change in which of the following ways?

(A)

| Price | Quantity |
|---|---|
| Decrease | Decrease |

(B)

| Price | Quantity |
|---|---|
| Decrease | Increase |

(C)

| Price | Quantity |
|---|---|
| Increase | Not change |

(D) ✓

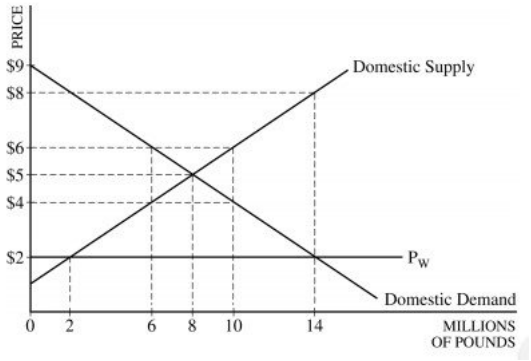
| Price | Quantity |
|---|---|
| Increase | Decrease |

(E)

| Price | Quantity |
|---|---|
| Increase | Increase |

# Unit 2 Practice Questions - ALL

**389.** Sugar is freely traded in the world market. Assume that a country, Loriland, is a price taker in the world market for sugar. Some of the sugar consumed in Loriland is produced domestically while the rest is imported. The world price of sugar is $2 per pound. The graph below shows Loriland's sugar market, and $P_W$ represents the world price.




a. At the world price of $2 per pound, how much sugar is Loriland importing?

b. Suppose that Loriland imposes a per-unit tariff on sugar imports and the new domestic price including the tariff is $4.

i. Identify the new level of domestic production.

ii. Calculate the domestic consumer surplus for Loriland. You must show your work.

iii. Calculate the total tariff revenue collected by the government. You must show your work.

c. Given the world price of $2, what per-unit tariff maximizes the sum of Loriland's domestic consumer surplus and producer surplus?

Respond to all parts of the question.

**Part A**

One point is earned for stating that Loriland is importing 12 million pounds.

| 0 | 1 ✓ |
|---|---|

The student earns all of the following points:

One point is earned for stating that Loriland is importing 12 million pounds.

**Part B**

**3 Points**

- One point is earned for identifying the new level of domestic production as 6 million pounds.
- One point is earned for calculating the domestic consumer surplus as $25 million and showing the work: 1/2[(9 - 4)x10] =25$
- One point is earned for calculating the revenue from the tariff as $8 million and showing the work: (4 - 2)(10 − 6) =8.$

| 0 | 1 | 2 | 3 ✓ |
|---|---|---|---|

The student earns all of the following points:

- One point is earned for identifying the new level of domestic production as 6 million pounds.
- One point is earned for calculating the domestic consumer surplus as $25 million and showing the work: 1/2[(9 - 4)x10] =25$
- One point is earned for calculating the revenue from the tariff as $8 million and showing the work: (4 - 2)(10 − 6) =8.$

**Part C**

One point is earned for identifying the per-unit tariff that maximizes the sum of consumer and producer surplus as $0.

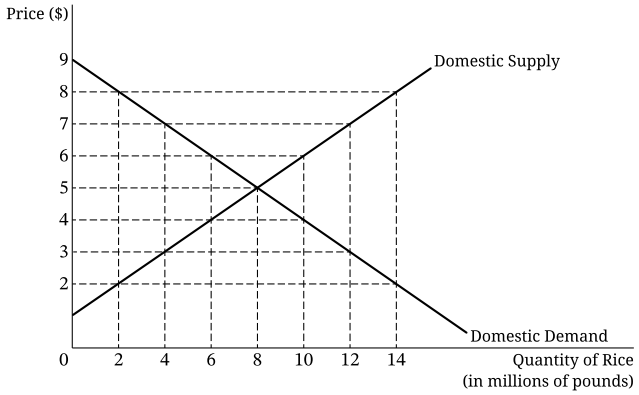
# Unit 2 Practice Questions - ALL

| 0 | 1 ✓ |
|---|---|

The student earns all of the following points:

One point is earned for identifying the per-unit tariff that maximizes the sum of consumer and producer surplus as $0.

**390.** The graph shows the domestic demand for rice and the domestic supply of rice in Deltaland.




If rice is freely traded in the world and the world price of rice is $3, then Deltaland will

(A) export 4 million pounds of rice

(B) export 8 million pounds of rice

(C) import 4 million pounds of rice

(D) import 8 million pounds of rice ✓

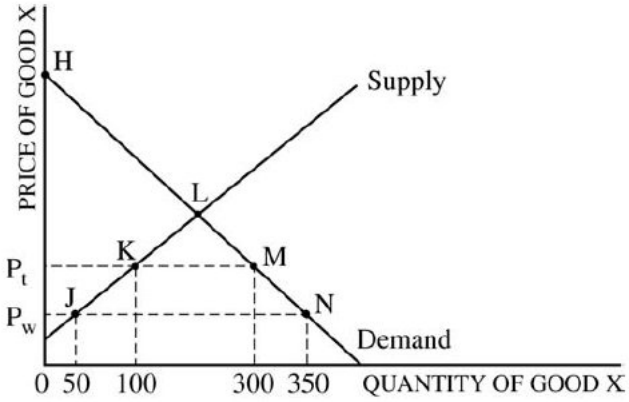
(E) import 12 million pounds of rice

**Answer D**

Correct. At a world price of rice of $3, the domestic quantity supplied of rice is 4 million pounds and the domestic quantity demanded is 12 million pounds. Thus, Deltaland will import the difference between the domestic quantity demanded and the domestic quantity supplied, which is equal to 8 million (= 12 million − 4 million) pounds of rice.

# Unit 2 Practice Questions - ALL

**391.**




The diagram above shows the domestic supply and demand for good X in the country of Placonia.

a. If the current world price of good X is $P_w$, does Placonia export or import good X? Explain.

b. Given your answer in part (a), indicate the quantity of good X that Placonia exports or imports.

c. Assume that the government of Placonia imposes a tariff on good X, increasing the price from $P_w$ to $P_t$.

Using the labels in the graph, indicate the change in each of the following in Placonia.

i. Consumer surplus

ii. Producer surplus

d. Indicate how employment in the domestic industry that produces good X is affected by the tariff.

Respond to all parts of the question.

**Part A**

1 point – Placonia imports the good

1 point – The domestic opportunity cost of producing good X is higher than the world price (PW) for unit JN. Or, they can get it cheaper at the world price.

| 0 | 1 | 2 ✓ |
|---|---|---|

Student receives 2/2 point(s)

1 point – Placonia imports the good

1 point – The domestic opportunity cost of producing good X is higher than the world price (PW) for unit JN. Or, they can get it cheaper at the world price.

**Part B**

1 point: They import 300 (=350 - 50) units or JN units

| 0 | 1 ✓ |
|---|---|

Student receives 1/1 point(s)

1 point: They import 300 (=350 - 50) units or JN units

**Part C**

1 point – Consumer surplus decreases from PwNH to PtMH, or a decrease of MNPWPt

1 point – Producer surplus increases by JKPtPW

# Unit 2 Practice Questions - ALL

| 0 | 1 | 2 ✓ |
|---|---|---|

Student receives 2/2 point(s)

1 point – Consumer surplus decreases from PwNH to PtMH, or a decrease of MNPWPt

1 point – Producer surplus increases by JKPtPW

**Part D**

1 point: Employment would increase because domestic production of good X increases in Placonia

| 0 | 1 ✓ |
|---|---|

Student receives 1/1 point(s)

1 point: Employment would increase because domestic production of good X increases in Placonia

**392.** Which of the following will result in the short run if the government imposes a binding quota?

(A) A decrease in the price paid by consumers
(B) A rightward shift in the supply curve
(C) A leftward shift in the demand curve
(D) An increase in consumer surplus
(E) A deadweight loss ✓

**Answer E**

Correct. A binding quota limits the quantity exchanged in the market to the quantity supplied that is less than the equilibrium quantity. As a result, the price paid by the buyers will be higher than that received by the sellers at the limited quantity, moving the market away from allocative efficiency and creating deadweight loss.

**393.** Country Z is both a producer and an importer of cloth. Which of the following will happen if the government of Country Z imposes a tariff on cloth and the country continues to import some cloth from abroad?

(A) There will be a decrease in domestic producer surplus.
(B) There will be an increase in the quantity demanded for cloth.
(C) As the country produces more cloth, there will be an efficiency gain for the economy.
(D) There will be a decrease in consumer surplus for domestic consumers. ✓
(E) The domestic consumption of cloth will increase.

**Answer D**

Correct. The tariff will raise the domestic price of cloth in Country Z. There will be a higher price for cloth, increased domestic production of cloth, reduced imports of cloth, reduced total consumption of cloth, and some efficiency loss. With the higher price for cloth, domestic producer surplus will increase and consumer surplus will decrease.

# Unit 2 Practice Questions - ALL

**394.** Country Z is both a producer and an importer of green tea. If country Z imposes a tariff on imports of green tea, which of the following will occur in the domestic market of green tea?

(A) Consumer surplus will increase.

(B) Domestic production will increase. ✓

(C) Total consumption of green tea will increase.

(D) Producer surplus will decrease.

(E) The price paid by domestic consumers will decrease.

**Answer B**

Correct. The imposition of the tariff increases the domestic price of green tea to producers and to consumers in country Z, which results in an increase in domestic production (an upward movement along the supply curve).

**395.** Which of the following describes a difference between the imposition of a tariff on imports and the imposition of a quota on imports?

(A) A tariff will affect domestic consumption, whereas a quota will not.

(B) A tariff will affect domestic production, whereas a quota will not.

(C) A tariff will increase domestic consumer surplus, whereas a quota will not.

(D) A tariff will generate revenue for the government, whereas a quota will not. ✓

(E) A tariff will eliminate deadweight loss, whereas a quota will not.

**Answer D**

Correct. A tariff is a tax on imports that will generate revenue for the government imposing the tariff. A quota is a quantity restriction on imports; quotas do not generate any revenue for the government imposing the quota.

**396.** The tables below show the domestic demand and domestic supply for two small countries participating in a large global market with a world price of coffee equal to $3.

| Country A | | | Country B | | |
|---|---|---|---|---|---|
| **Price** | **Quantity Demanded** | **Quantity Supplied** | **Price** | **Quantity Demanded** | **Quantity Supplied** |
| 2 | 40 | 0 | 0 | 20 | 0 |
| 3 | 30 | 10 | 1 | 15 | 5 |
| 4 | 20 | 20 | 2 | 10 | 10 |
| 5 | 10 | 30 | 3 | 5 | 15 |
| 6 | 0 | 40 | 4 | 0 | 20 |

Which of the following would be true given the price in the world market is $3 ?

(A) Neither country would export coffee.

(B) Neither country would import coffee.

(C) Country A would import 20 units of coffee, and Country B would export 10. ✓

(D) Country A would export 20 units of coffee, and Country B would import 10.

(E) Given the demand and supply schedules, $3 cannot be an equilibrium global price.

**Answer C**

Correct. At a global price of $3, the domestic quantity demanded in Country A is 30, and the domestic quantity supplied in Country A is 10. Therefore, country A would import 20 units of coffee.
3, the domestic quantity demanded in Country B is 5, and the domestic supply in Country B is 15. Therefore, Country B would export the extra 10 units.

# Unit 2 Practice Questions - ALL

**397.** Suppose the small country of Aronow imports $40,000\,\text{kg}$ of bananas. The global price of bananas is $\$0.50$ per kg. The government of Aronow collects tariff revenues of $\$4{,}000$ from banana imports.

Which of the following is true?

(A) The consumers in Aronow pay a price of $\$0.60$ per kg of bananas. ✓

(B) The domestic production of bananas in Aronow would increase with the removal of the tariff.

(C) The deadweight loss in the market for bananas in Aronow would increase with the removal of the tariff.

(D) The removal of the tariff would cause domestic consumer surplus in the market for bananas in Aronow to increase but by less than the decrease in domestic producer surplus.

(E) Aronow's total tariff revenue collected in the banana market would be maximized if the per-unit tariff were equal to the difference between its autarky price and the world price.

**Answer A**

Correct. Imports are equal to $40,000\,\text{kg}$ of bananas. The tax collected by the government is $\$4{,}000$. The tax collected by the government is equal to the tariff times the amount of imports, $\$4000 = \text{tariff} * 40{,}000$. Therefore, the tariff must be $\$.10$. Given the global price is $\$.50$, the price paid by domestic consumers is the global price plus the tariff, which is $\$0.50 + \$0.10 = \$0.60$.

**398.** Country Z has a downward sloping domestic demand curve and an upward sloping domestic supply curve for widgets. In the absence of trade, the domestic price of widgets is $P_0$. Now the country engages in trade, and the price for widgets, $P_w$, is below the domestic price, $P_0$. Which of the following will occur?

(A) Country Z will begin exporting widgets.

(B) Consumer surplus will decrease in Country Z.

(C) Domestic producer surplus will decrease in country Z. ✓

(D) Domestic production of widgets in Country Z will increase.

(E) The price of widgets received by domestic producers will increase.

**Answer C**

Correct. With the world price for widgets below the domestic price of widgets, the domestic production or quantity supplied of widgets will decrease, i.e., a downward movement along the supply curve. Therefore, domestic producer surplus will decrease.