

AP MICROECONOMICS — UNIT 2

FRQ MUST-KNOW REVIEW GUIDE

Use this checklist to prepare for the Unit 2 test.

Based directly on the two FRQs in the Unit 2 Progress Check.

FRQ Skills: You Must Know How To...

- ☐ Read a supply-and-demand graph and identify equilibrium price (P_e) and equilibrium quantity (Q_e).
- ☐ Correctly label the vertical axis as Price and the horizontal axis as Quantity.
- ☐ Label demand (D) and supply (S) curves correctly.
- ☐ Show changes on a graph with clearly labeled curves, axes, prices, quantities, and directional changes.
- ☐ Show your work whenever a question says “Calculate.”
- ☐ Answer every part of an FRQ directly and explain your reasoning.

1. Per-Unit Sales Tax

Scenario in the FRQ: A \$2 per-unit sales tax is imposed on sugar-based soft drinks to reduce consumption.

- ☐ Explain why the price paid by consumers does NOT necessarily increase by the full amount of the tax.
 - Know the idea of tax incidence: the tax burden is shared between buyers and sellers depending on the market.
 - Be able to identify the price consumers pay and the price producers receive after a tax.
 - Remember: the difference between the consumer price and producer price equals the per-unit tax.
- ☐ Calculate government tax revenue.
 - Formula: Tax Revenue = Tax per Unit $\times$ Quantity Sold After the Tax
 - Use the post-tax quantity—not the original equilibrium quantity.
- ☐ Determine what happens to consumer surplus after a per-unit tax.
 - Be able to state whether consumer surplus increases, decreases, or stays the same.
 - Use the graph to identify the change in the area representing consumer surplus.
- ☐ Calculate the deadweight loss created by the tax.
 - Know that a tax can reduce the quantity traded and prevent some mutually beneficial trades.
 - For a standard tax diagram: $DWL = \frac{1}{2} \times \text{Tax per Unit} \times \text{Reduction in Quantity Traded}$.
 - Always show the numbers you used and the calculation.

Tax Question	What You Must Be Able To Do
Price effect	Explain why the consumer price may rise by less than the full tax.
Tax revenue	Tax $\times$ post-tax quantity
Consumer surplus	Identify the direction of change and explain using the graph.
Deadweight loss	$\frac{1}{2} \times \text{tax} \times \text{decrease in quantity traded}$

2. Price Ceilings

Scenario in the FRQ: The government sets a price ceiling of \$7 instead of imposing the tax.

- ☐ Define a price ceiling: a legal maximum price.
- ☐ Determine whether a price ceiling is binding or nonbinding.
 - Compare the ceiling price with the equilibrium price.
 - A ceiling above equilibrium is nonbinding: the market remains at equilibrium.
 - A ceiling below equilibrium is binding: the quantity actually exchanged is limited by the quantity supplied at the ceiling price.
- ☐ Identify the quantity actually exchanged when a price ceiling is imposed.
- ☐ Explain your answer using the graph—not just a number.

3. Domestic Market + International Trade

Scenario in the FRQ: Grainland initially produces wheat without international trade. Later, the country opens to world trade.

- ☐ Draw a correctly labeled domestic supply-and-demand graph.
- ☐ Label the original domestic equilibrium price as P_e and equilibrium quantity as Q_e .
- ☐ Understand what the world price (P_W) represents.
- ☐ Compare the world price with the domestic equilibrium price.
- ☐ Identify domestic quantity demanded at P_W and label it Q_3 .
- ☐ Identify domestic quantity supplied at P_W and label it Q_1 .
- ☐ Determine whether the country will export or import.
 - If P_W is below the domestic equilibrium price, domestic consumers want more wheat than domestic producers supply → the country imports.
 - If P_W is above the domestic equilibrium price, domestic producers want to supply more than domestic consumers demand → the country exports.
- ☐ Calculate or identify the amount of imports/exports from the graph when required.
 - Imports = Quantity Demanded – Quantity Supplied.
 - Exports = Quantity Supplied – Quantity Demanded.

4. Gains From International Trade

- ☐ Identify who benefits when the country opens to international trade.
- ☐ Explain the effect of a lower world price on domestic consumers.
- ☐ Explain the effect of a lower world price on domestic producers.
- ☐ Use the graph to support your explanation of changes in consumer and producer outcomes.
- ☐ Distinguish between the effects on domestic consumers and domestic producers.

5. Subsidies to Domestic Producers

Scenario in the FRQ: The government provides a subsidy to wheat farmers so that all wheat can be produced domestically at the world market price.

- ☐ Explain what a per-unit subsidy does to the effective cost of production.
- ☐ Show the effect of the subsidy on the supply curve.

- ☐ Understand that a producer subsidy shifts the supply curve downward/rightward by the amount of the subsidy.
- ☐ Show how the subsidy increases the quantity supplied by domestic producers.
- ☐ Identify the subsidy needed for domestic producers to supply the quantity demanded at the world price.
- ☐ Use the graph to show how the subsidy can eliminate the need for imports.

6. Graphing Checklist — Before You Move On

- ☐ Both axes are labeled.
- ☐ Price is on the vertical axis; Quantity is on the horizontal axis.
- ☐ Demand and supply curves are labeled D and S.
- ☐ Equilibrium is clearly identified when required.
- ☐ P_e , Q_e , P_W , Q_1 , and Q_3 are labeled where required.
- ☐ Any new curve is clearly identified.
- ☐ Directional changes are shown with arrows or clearly shifted curves.
- ☐ The graph is large enough to read.
- ☐ If calculating an area such as DWL, I can identify the correct triangle and its dimensions.

7. Calculations You Should Know

Concept	Formula / Method
Tax revenue	Tax per unit $\times$ quantity sold after the tax
Deadweight loss from a tax	$\frac{1}{2} \times$ tax per unit $\times$ reduction in quantity traded
Imports	Domestic quantity demanded – domestic quantity supplied
Exports	Domestic quantity supplied – domestic quantity demanded
Triangle area	$\frac{1}{2} \times$ base $\times$ height

8. Can You Answer These Without Looking at Your Notes?

- ☐ Why does a per-unit tax create a gap between the price buyers pay and the price sellers receive?
- ☐ Why does the price paid by consumers generally rise by less than the full amount of a tax?
- ☐ How do you calculate tax revenue?
- ☐ Why does consumer surplus decrease after a tax?
- ☐ Why does a tax create deadweight loss?
- ☐ How do you calculate deadweight loss from the graph?
- ☐ How do you tell whether a price ceiling is binding?
- ☐ What quantity is actually exchanged when a binding price ceiling creates a shortage?
- ☐ If the world price is below the domestic equilibrium price, will the country import or export?
- ☐ How do you identify domestic quantity demanded and quantity supplied at the world price?
- ☐ Who benefits when domestic consumers can buy a product at a lower world price?
- ☐ How does a producer subsidy affect the supply curve?

- How can a subsidy allow domestic producers to supply the entire quantity demanded at the world price?

TEST-DAY REMINDER

READ → GRAPH → LABEL → CALCULATE → EXPLAIN

If the FRQ asks you to calculate, show your work. If it asks you to explain, use economic reasoning.