

Unit 2: Consumer Behaviour & Decision-Making

Practice Activities

Name: _____ Date: _____ Class: _____

This workbook contains practice activities for all topics in Unit 2. Work through each section carefully. Show all your calculations. Check the Answer Key on the last page when you are done.

PART 1: Utility Theory — What Is Satisfaction Worth?

Activity 1A: Key Terms — Match the Definition

Draw a line or write the letter to match each term (left) to its correct definition (right).

COLUMN A: Terms	COLUMN B: Definitions
1. Utility	A. A unit used to measure satisfaction
2. Total Utility (TU)	B. The dissatisfaction or negative feeling from consuming one more unit
3. Marginal Utility (MU)	C. The extra satisfaction gained from consuming one more unit of a good
4. Utils	D. A consumer who uses all available information to make decisions that maximise satisfaction
5. Disutility	E. The total satisfaction received from consuming all units of a good
6. Rational Consumer	F. The satisfaction or pleasure a consumer gets from consuming a good or service

Activity 1B: Calculate Total Utility and Marginal Utility

Li Wei is buying cups of bubble tea at HEYTEA. The table below shows her Total Utility. Calculate the Marginal Utility for each cup. Use the formula: $MU = \text{Change in } TU \div \text{Change in Quantity}$.

Cups of Bubble Tea (Q)	Total Utility (TU)	Marginal Utility (MU)	How does it feel?
0	0	—	Nothing yet
1	60	_____	Amazing!
2	110	_____	Really good
3	150	_____	Good
4	180	_____	Okay
5	200	_____	Getting full...
6	205	_____	Almost too much
7	200	_____	Too full
8	190	_____	Uncomfortable

Answer these questions based on your completed table:

- a) At which quantity (Q) does Total Utility reach its highest point?

- b) At which cup does Marginal Utility first become negative?

- c) What happens to Total Utility when Marginal Utility is negative? Why?

- d) Li Wei's friend says: "She should drink all 8 cups because TU only goes up." Is her friend correct? Explain.

Activity 1C: True or False? — Correct the False Statements

Write TRUE or FALSE. If the statement is FALSE, rewrite it so it is correct.

1. A rational consumer always spends all their money.

True / False: _____

Correction (if false):

2. Utility can be measured in units called "utils."

True / False: _____

Correction (if false):

3. Marginal Utility is the total satisfaction from consuming all units of a good.

True / False: _____

Correction (if false):

4. A consumer will stop buying a good when $MU = 0$, because they cannot gain any more satisfaction.

True / False: _____

Correction (if false):

5. Disutility means the consumer feels positive satisfaction from a good.

True / False: _____

Correction (if false):

PART 2: The Law of Diminishing Marginal Utility

Activity 2A: Scenario — Eating Hotpot

Mei Ling goes to a hotpot restaurant with friends. She eats portions of beef. The table shows her Marginal Utility. Read the data carefully and answer the questions below.

Portions of Beef	Marginal Utility (MU)	Total Utility (TU) — Calculate!
1	90	
2	70	
3	50	
4	30	
5	10	
6	-10	

e) Does this table demonstrate the Law of Diminishing Marginal Utility? Explain how you know.

f) Calculate Total Utility for each portion and fill in the table above.

g) Should Mei Ling eat the 6th portion of beef? Why or why not?

h) Between which two portions does Marginal Utility fall the most? Show your calculation.

i) At which portion is Mei Ling's satisfaction at its highest (maximum TU)?

Activity 2B: Multiple Choice — Circle the Best Answer

Choose ONE best answer for each question.

- According to the Law of Diminishing Marginal Utility, as a consumer eats more slices of pizza:
 - Total Utility always falls
 - Marginal Utility falls but stays positive
 - Each additional slice provides less extra satisfaction than the one before
 - Total Utility and Marginal Utility both increase
- A student plays a mobile game for 4 hours. Which is MOST likely true?
 - Marginal Utility is higher in hour 4 than hour 1
 - Total Utility falls in hour 1
 - Marginal Utility is highest in hour 1 and falls each hour
 - Total Utility equals zero after 4 hours

3. When a consumer's Marginal Utility equals zero, this means:
- A. They are at maximum Total Utility — they cannot gain more satisfaction
 - B. They hate the product
 - C. Total Utility is also zero
 - D. They should consume one more unit
4. A consumer feels sick after eating a 7th piece of cake. This best illustrates:
- A. Maximum Total Utility
 - B. Marginal Utility = 0
 - C. Disutility — Marginal Utility has become negative
 - D. The rational consumer principle

PART 3: Consumer Choice — Maximising Satisfaction on a Budget

Activity 3A: Budget Allocation

Wang Fang has ¥60 to spend. She can buy bubble tea (¥15 each) or snacks (¥10 each). The table shows the Marginal Utility she gets from each. Help her decide how to spend her money to get MAXIMUM total satisfaction.

★ **Tip:** A rational consumer compares MU per yuan (¥) spent: $MU \div \text{Price}$. Always buy the next unit of whichever good gives the most satisfaction per yuan.

Step 1: Fill in the MU per ¥ column for each good.

Units	Bubble Tea MU	Bubble Tea MU per ¥15	Snack MU	Snack MU per ¥10
1st	75		60	
2nd	60		50	
3rd	45		40	
4th	30		20	

Step 2: Use your MU-per-¥ values to decide the order in which Wang Fang should buy. Record her purchases below:

Purchase Order	Buy What?	Cost (¥)	Running Total Spent (¥)	MU Gained
1st purchase				
2nd purchase				
3rd purchase				
4th purchase				
5th purchase				

Step 3: Answer the questions.

j) What is the optimal combination of bubble teas and snacks that Wang Fang should buy?

k) What is her Total Utility from this combination? (Add up all MU values gained.)

l) Is there any money left over? If yes, how much? What would a rational consumer do?

PART 4: Consumer Surplus — The "Good Deal" Benefit

Key Formula: $\text{Consumer Surplus} = \text{Willingness to Pay} - \text{Actual Price}$

Activity 4A: Calculate Consumer Surplus

Calculate the consumer surplus in each scenario. Show your working.

1. Zhang Ming is willing to pay ¥80 for a hotpot meal. The restaurant charges ¥65.

Calculation:

Working: _____

Zhang Ming's Consumer Surplus:

2. A phone case on Taobao costs ¥25. Chen Li was willing to pay ¥40 for it.

Calculation:

Working: _____

Chen Li's Consumer Surplus:

3. Tickets for a popular singer's concert are priced at ¥300. Xiao Yu was willing to pay ¥450.

Calculation:

Working: _____

Xiao Yu's Consumer Surplus:

4. The table below shows what four students are willing to pay for a school trip ticket. The actual price is ¥150. Calculate each student's consumer surplus.

Student	Willing to Pay	Actual Price	Consumer Surplus
A (Jing)	¥220	¥150	
B (Wei)	¥180	¥150	
C (Hua)	¥155	¥150	
D (Mei)	¥130	¥150	

m) Which student will NOT buy a ticket? Why?

n) What is the TOTAL consumer surplus for the students who do buy tickets?

Activity 4B: Real-Life Application

Think about your own daily life in China. Answer the questions below in full sentences.

1. Give one example of a time when YOU experienced consumer surplus. What did you buy? What were you willing to pay, and what was the actual price?

2. Many popular apps in China (like Meituan or Pinduoduo) offer discount coupons. How do these coupons affect consumer surplus? Use the formula to explain.

PART 5: Price Elasticity of Demand (PED)

Key Formula: $PED = \% \text{ Change in Quantity Demanded} \div \% \text{ Change in Price}$

Interpreting PED: $|PED| > 1 = \text{Elastic}$ | $|PED| < 1 = \text{Inelastic}$ | $|PED| = 1 = \text{Unit Elastic}$

Activity 5A: PED Calculations

Calculate PED for each scenario. Show all working. Then state whether demand is ELASTIC or INELASTIC.

★ **Tip:** Step 1: $\% \Delta P = (\text{New P} - \text{Old P}) \div \text{Old P} \times 100$. Step 2: $\% \Delta Q_d = (\text{New Q} - \text{Old Q}) \div \text{Old Q} \times 100$.
Step 3: $PED = \% \Delta Q_d \div \% \Delta P$

1. HEYTEA raises the price of its signature milk tea from ¥25 to ¥30. Daily quantity demanded falls from 400 cups to 320 cups.

% ΔP : _____

% ΔQ_d : _____

PED: _____

Elastic / Inelastic / Unit Elastic:

2. DiDi raises its base fare by 10%. The number of rides taken per day falls by 30%.

% ΔP : _____

% ΔQ_d : _____

PED: _____

Elastic / Inelastic / Unit Elastic:

3. The price of rice at a local market rises from ¥4/kg to ¥4.40/kg. Quantity demanded falls from 1000 kg to 980 kg per day.

% ΔP : _____

% ΔQ_d : _____

PED: _____

Elastic / Inelastic / Unit Elastic:

4. The price of a new smartphone drops by 15%. Quantity demanded increases by 45%.

% ΔP : _____

% ΔQ_d : _____

PED: _____

Elastic / Inelastic / Unit Elastic:

Activity 5B: Classify the Good

For each good, decide whether demand is likely ELASTIC or INELASTIC. Give ONE reason. No calculations needed — use your knowledge of the determinants of PED.

Good or Service	Elastic or Inelastic?	One Reason
Insulin (life-saving medicine)		
Designer brand handbag (luxury)		
Rice (staple food in China)		
HEYTEA bubble tea		
Petrol / gasoline		
A one-of-a-kind concert ticket		

Activity 5C: The Revenue Test

Use your knowledge of PED and the Revenue Test to advise these businesses. Recall: $\text{Total Revenue} = \text{Price} \times \text{Quantity}$

Scenario 1: A clothing seller on Taobao currently sells 500 jackets per month at ¥200 each. She estimates the PED for her jackets is -2.0 . She is thinking about raising the price to ¥220.

o) Is demand for her jackets elastic or inelastic?

p) Calculate her CURRENT Total Revenue.

q) If she raises her price by 10%, what will happen to quantity demanded? Show the calculation.

r) What will happen to her Total Revenue? Should she raise the price?

Scenario 2: A small hotpot restaurant has estimated its PED is -0.4 . The owner wants to increase revenue. Should he raise prices or lower prices? Explain your reasoning.

PART 6: Determinants of PED

Activity 6A: Explain the Determinant

The four main determinants of PED are: (1) Availability of substitutes, (2) Necessity vs. Luxury, (3) Proportion of income spent, (4) Time period. Apply them to each situation below.

1. "There are dozens of coffee brands available in China — Luckin Coffee, Starbucks, Costa, and many local brands. Why would you expect the PED for any one brand to be relatively elastic?"

Determinant: _____

Explanation:

2. "A new type of medication is the only drug that treats a rare disease. Explain why PED for this drug is likely to be very inelastic."

Determinant: _____

Explanation:

3. "In the short run, people can't easily change their habits when petrol prices rise. But in the long run, they might buy electric cars or use public transport. What does this tell us about the relationship between time and PED?"

Determinant: _____

Explanation:

4. "A ¥5 increase in the price of a ¥10 item feels very significant. But a ¥5 increase in the price of a ¥5,000 television seems unimportant. How does proportion of income explain this?"

Determinant: _____

Explanation:

PART 7: Types of Goods

Normal Good Income $\uparrow \rightarrow$ Demand $\uparrow$ ($YED > 0$) <i>Luxury: $YED > 1$ Necessity: $0 < YED < 1$</i>	Inferior Good Income $\uparrow \rightarrow$ Demand $\downarrow$ ($YED < 0$) <i>e.g. Instant noodles, budget transport</i>
Substitute Goods Used instead of each other ($XED > 0$) <i>e.g. Huawei vs Xiaomi phones</i>	Complementary Goods Used together ($XED < 0$) <i>e.g. Smartphones + phone cases</i>

Activity 7A: Classify the Good

Decide whether each good is NORMAL, INFERIOR, a SUBSTITUTE, or a COMPLEMENT. Give a brief reason.

Good / Situation	Type of Good	Reason
Instant noodles — when household income rises significantly		
Smartphones + protective phone cases		
Meituan food delivery vs cooking at home		
Restaurant meal — when income rises		
DiDi ride-hailing vs public bus		
Laptop + laptop bag		
Luckin Coffee vs Starbucks		

Activity 7B: Income Elasticity of Demand (YED) Calculations

Formula: $YED = \% \text{ Change in Quantity Demanded} \div \% \text{ Change in Income}$

$YED > 0$ = Normal | $YED > 1$ = Luxury | $0 < YED < 1$ = Necessity | $YED < 0$ = Inferior

Calculate YED and classify the good. Show your working.

1. When average monthly income in a city rises by 20%, demand for restaurant meals increases by 35%.

YED Calculation: _____

Classification (Normal/Inferior/Luxury/Necessity):

2. Income rises by 10%. Demand for instant noodles falls by 8%.

YED Calculation: _____

Classification (Normal/Inferior/Luxury/Necessity):

3. A 15% rise in income leads to a 12% increase in demand for rice.

YED Calculation: _____

Classification (Normal/Inferior/Luxury/Necessity):

4. Income increases by 25%. Demand for luxury handbags rises by 50%.

YED Calculation: _____

Classification (Normal/Inferior/Luxury/Necessity):

Activity 7C: Cross-Price Elasticity of Demand (XED) Calculations

Formula: $XED = \% \text{ Change in Qd of Good A} \div \% \text{ Change in Price of Good B}$

$XED > 0$ = Substitutes | $XED < 0$ = Complements | $XED \approx 0$ = Unrelated

Calculate XED, then state whether the goods are SUBSTITUTES or COMPLEMENTS.

1. The price of Luckin Coffee rises by 20%. Demand for Starbucks rises by 12%.

XED Calculation: _____

Substitutes or Complements?

2. The price of smartphones rises by 15%. Demand for phone cases falls by 10%.

XED Calculation: _____

Substitutes or Complements?

3. The price of DiDi rides rises by 25%. Demand for public bus tickets increases by 15%.

XED Calculation: _____

Substitutes or Complements?

4. The price of hotpot soup base rises by 10%. Demand for beef slices for hotpot falls by 8%.

XED Calculation: _____

Substitutes or Complements?

PART 8: Comprehensive Review

Activity 8A: Case Study — The Bubble Tea Market in China

READ THE FOLLOWING CAREFULLY

China's bubble tea industry is worth hundreds of billions of yuan and is growing rapidly. Brands such as HEYTEA, Nayuki, and CoCo compete for millions of young consumers. A standard milk tea costs between ¥15 and ¥35, depending on the brand and ingredients.

Consumer research shows that young people in China report high satisfaction from their first cup of bubble tea in a day, but often feel less excited about a second or third cup. Some consumers say they feel "too sweet" or uncomfortable after drinking more than two cups.

When HEYTEA raised its prices by 15% in 2023, some customers switched to cheaper brands like CoCo or homemade tea. However, loyal customers who valued the premium ingredients continued to buy. HEYTEA reported that its total revenue increased slightly despite the price rise.

Meanwhile, a study found that when incomes rise in Chinese cities, consumers tend to switch from cheap instant drinks to premium milk teas. At the same time, demand for cheaper packaged juice drinks — once very popular — has been falling as incomes increase.

Answer all questions using evidence from the case study and your economic knowledge.

1. Using the case study, explain the Law of Diminishing Marginal Utility as it applies to bubble tea. Use specific evidence from the text.

2. HEYTEA raised its price by 15% but total revenue increased. What does this tell us about the PED for HEYTEA specifically? Is demand elastic or inelastic? Explain why loyal customers behave this way.

3. Some consumers switched from HEYTEA to CoCo when HEYTEA's prices rose. What type of goods are HEYTEA and CoCo to each other? What would you expect the XED to be — positive or negative? Why?

4. The case study says demand for cheap packaged juice falls as incomes rise. What type of good is cheap packaged juice? Use the concept of YED to explain.

5. Premium bubble tea (like HEYTEA) becomes more popular as incomes rise. What type of good is this? Calculate the YED if: income rises 20% and demand for HEYTEA rises 36%.

6. As a consumer, you have ¥30 to spend. A cup of HEYTEA costs ¥25 and a CoCo tea costs ¥15. Using the concept of consumer surplus and rational consumer behaviour, explain how you would decide which to buy.

Activity 8B: Mixed Multiple Choice Review

Choose the ONE best answer. Each question is worth 1 mark.

1. A student eats five pieces of fried chicken. The first gives 80 utils, the second 55, the third 30. What best describes this situation?
 - A. The student is irrational because satisfaction is falling
 - B. This illustrates the Law of Diminishing Marginal Utility
 - C. Total Utility is falling
 - D. Marginal Utility is rising
2. Consumer surplus is best described as:
 - A. The total spending by a consumer on a good
 - B. The amount saved when a good goes on sale
 - C. The difference between what a consumer is willing to pay and what they actually pay
 - D. The satisfaction a consumer gains from one more unit
3. A 10% increase in price leads to a 25% fall in quantity demanded. The PED is:
 - A. -2.5 (elastic)
 - B. +2.5 (inelastic)
 - C. -0.4 (inelastic)
 - D. +0.4 (unit elastic)
4. When the price of Good A rises and demand for Good B also rises, the two goods are most likely:
 - A. Complementary goods
 - B. Inferior goods
 - C. Substitute goods
 - D. Normal goods
5. A firm has inelastic demand for its product. If it raises its price, total revenue will:
 - A. Fall, because fewer customers will buy
 - B. Rise, because the price increase outweighs the fall in quantity
 - C. Stay the same, because $PED = 1$
 - D. Fall to zero
6. Income rises by 10% and demand for instant noodles falls by 5%. What type of good is this?
 - A. Normal good
 - B. Inferior good
 - C. Substitute good
 - D. Complementary good
7. Which of the following goods is MOST likely to have inelastic demand?
 - A. Designer sunglasses

- B. A specific brand of bubble tea
 - C. Prescription medication with no substitute
 - D. Airline tickets for holiday travel
8. A rational consumer will continue buying a good until:
- A. Their income runs out
 - B. The Marginal Utility equals zero or equals the price paid
 - C. Total Utility is maximised and cannot rise further
 - D. Both B and C are correct
9. When the price of coffee rises, demand for tea increases. This shows that coffee and tea are:
- A. Complementary goods — $XED < 0$
 - B. Inferior goods — $YED < 0$
 - C. Substitute goods — $XED > 0$
 - D. Normal goods — $YED > 0$
10. A consumer's willingness to pay for a hotpot dinner is ¥120. She pays ¥90. Her consumer surplus is:
- A. ¥120
 - B. ¥90
 - C. ¥30
 - D. ¥210