Elasticity of Demand
Workbook Questions and Problems

Companion Exercises for Parts I–III

Part I: What elasticity means
Part II: How to calculate elasticity
Part III: Elasticity and total revenue

These exercises are designed to follow the three elasticity sections in your study guide. The questions move from conceptual understanding to numerical calculation and then to business decision-making. Students should show work on calculation problems, classify each coefficient correctly, and explain the economic reasoning behind pricing decisions.

Quick Reference

Elastic demand	Elasticity coefficient greater than 1; quantity demanded is very responsive to price.
Inelastic demand	Elasticity coefficient less than 1; quantity demanded is not very responsive to price.
Unit elastic demand	Elasticity coefficient equal to 1; percentage change in quantity demanded equals percentage change in price.
Midpoint method	Use the average of the starting and ending values for both price and quantity when calculating percentage changes.
Total revenue rule	When demand is elastic, price and total revenue move in opposite directions. When demand is inelastic, price and total revenue move in the same direction.

Section I. Part I Questions: Core Ideas and Classification

A. Short-answer conceptual questions

1. Define price elasticity of demand in words. Then explain why economists measure it with percentage changes rather than unit changes.

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2. Why is the elasticity coefficient for a demand curve usually treated in absolute value terms rather than as a negative number?

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3. State the difference between a change in demand and a change in quantity demanded. Why is that difference important when discussing elasticity?

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4. Explain why elasticity is about the buyer's responsiveness but is still extremely important for the supplier's pricing decisions.

5. Describe the difference between elastic demand, inelastic demand, and unit elastic demand in plain English.

6. Why can two goods both obey the law of demand and still have very different elasticity coefficients?

7. Explain why the availability of close substitutes tends to make demand more elastic.

8. Why does the passage of time usually make demand more elastic?

9. Why are necessities often more inelastic than luxuries?

10. Why does the share of a good in a consumer's budget matter for elasticity?

B. Classification and reasoning

1. Scenario: Gasoline for a commuter who must drive to work this week. Classify the demand as likely more elastic or more inelastic in the short run and explain why.

2. Scenario: A brand-name soft drink when several store brands are available. Classify the demand and explain your reasoning.

3. Scenario: Insulin for a diabetic patient. Classify the demand and explain why suppliers would expect this result.

4. Scenario: Movie tickets at a theater in a town with streaming services, restaurants, and sports bars. Classify the demand and explain why.

5. Scenario: College textbooks required for a course during the first week of class. Classify the demand in the very short run and explain.

6. Scenario: Restaurant meals during a long recession. Explain whether demand may become more elastic or less elastic and why.

Section II. Part II Problems: Calculating Elasticity

Use the midpoint method for every problem. Show each step: percentage change in quantity, percentage change in price, elasticity coefficient in absolute value, and final classification.

Percentage change in quantity demanded = [(Q2 − Q1) / ((Q2 + Q1)/2)] × 100
Percentage change in price = [(P2 − P1) / ((P2 + P1)/2)] × 100 Price elasticity of demand = |(% change in quantity demanded) / (% change in price)|

1. A product's price falls from $20 to $16, and quantity demanded rises from 100 units to 140 units.

%ΔQd	%ΔP	Elasticity Coefficient	Classification

2. The price of a streaming subscription rises from $12 to $15 per month, and quantity demanded falls from 500 to 420.

%ΔQd	%ΔP	Elasticity Coefficient	Classification

3. The price of coffee falls from $5.00 to $4.50 per pound, and quantity demanded rises from 200 to 230 pounds.

%ΔQd	%ΔP	Elasticity Coefficient	Classification

4. The price of concert tickets rises from $80 to $100, and quantity demanded falls from 1,000 tickets to 700 tickets.

%ΔQd	%ΔP	Elasticity Coefficient	Classification

5. The price of a prescription medicine rises from $40 to $44, and quantity demanded falls from 900 bottles to 870 bottles.

%ΔQd	%ΔP	Elasticity Coefficient	Classification

6. The price of a fast-food meal falls from $10 to $8, and quantity demanded rises from 300 meals to 420 meals.

%ΔQd	%ΔP	Elasticity Coefficient	Classification

7. The price of gasoline rises from $3.50 to $4.00 per gallon, and quantity demanded falls from 10,000 gallons to 9,400 gallons.

%ΔQd	%ΔP	Elasticity Coefficient	Classification

8. A tablet computer falls in price from $600 to $540, and quantity demanded increases from 1,200 units to 1,500 units.

%ΔQd	%ΔP	Elasticity Coefficient	Classification

C. Interpreting coefficients

1. An elasticity coefficient is 0.45. Explain exactly what that tells us about consumer responsiveness and classify the demand.

2. An elasticity coefficient is 1.00. What does that tell us about the percentage change in quantity demanded relative to the percentage change in price?

3. An elasticity coefficient is 2.40. Explain what that means and describe the likely shape of the demand curve.

4. Why can a straight-line demand curve contain both elastic and inelastic segments depending on the point chosen?

Section III. Part III Questions: Elasticity and Total Revenue

A. Basic relationships

1. If demand is elastic and the supplier lowers price, what happens to total revenue? Explain why.

2. If demand is elastic and the supplier raises price, what happens to total revenue? Explain why.

3. If demand is inelastic and the supplier raises price, what happens to total revenue? Explain why.

4. If demand is inelastic and the supplier lowers price, what happens to total revenue? Explain why.

5. What happens to total revenue when demand is unit elastic and price changes? Explain briefly.

6. Why is elasticity of demand often more useful to a business than the slope of the demand curve when making pricing decisions?

B. Total revenue calculations

1. A bakery sells 200 cakes per week at $15 each. After a price cut to $12, weekly sales rise to 280 cakes. Calculate total revenue before and after the price change. Based on the result, was demand elastic or inelastic over this range?

Case	Price × Quantity	Total Revenue
Before price change		
After price change		

2. A movie theater charges $10 per ticket and sells 600 tickets. After a price increase to $12, ticket sales fall to 540. Calculate total revenue before and after. What does the result imply about elasticity?

Case	Price × Quantity	Total Revenue
Before price change		
After price change		

3. A cell phone company charges $50 per month for a plan and has 4,000 customers. After cutting price to $45, customers rise to 4,600. Compute total revenue before and after and interpret the result.

Case	Price × Quantity	Total Revenue
Before price change		
After price change		

4. A medicine producer raises price from $25 to $28, and monthly sales fall from 10,000 units to 9,700 units. Compute total revenue before and after and interpret.

Case	Price × Quantity	Total Revenue
Before price change		
After price change		

5. A music streaming service lowers price from $11 to $9, and subscribers increase from 8,000 to 8,600. Compute total revenue before and after. Should the firm continue to consider lower pricing? Explain carefully.

Case	Price × Quantity	Total Revenue
Before price change		
After price change		

6. A university parking office raises permit fees from $120 to $140, and permits sold fall from 5,000 to 4,850. Compute total revenue before and after. What does that suggest?

Case	Price × Quantity	Total Revenue
Before price change		
After price change		

C. Pricing strategy and critical thinking

1. A firm discovers that demand for its product is highly elastic because many close substitutes exist. Should management generally be cautious about raising price? Explain.

2. A hospital system knows that demand for an emergency service is highly inelastic in the short run. Explain why this creates a difficult ethical issue if pricing decisions are based only on revenue.

3. A business wants to increase total revenue. Explain why it must know not only the direction of a price change but also the elasticity of demand over the relevant range.

4. Suppose a firm lowers price and total revenue stays exactly the same. What can the firm conclude about demand over that range?

5. Why might demand for gasoline be more inelastic this month but more elastic over the next three years?

6. Create your own example of a product with elastic demand and a product with inelastic demand. For each one, explain what would probably happen to total revenue if price rose by 10 percent.

Section IV. Cumulative Review Across All Three Parts

1. Write a short paragraph explaining the complete chain of reasoning from a price change to a change in quantity demanded, then to an elasticity coefficient, and finally to a change in total revenue.

2. Why is a coefficient of 0.80 not just “smaller” than a coefficient of 1.20, but economically different in the decision it suggests to suppliers?

3. A firm sells a product whose demand is currently inelastic. What market developments could make its demand become more elastic over time?

4. Explain why a product can be inelastic even when consumers dislike a price increase.

5. Describe one example in which a supplier might prefer lower total revenue in the short run because of a larger long-run strategy such as market share or customer retention.

End of student workbook questions. These exercises are intended to reinforce the three elasticity sections by moving from definitions and classification to midpoint-method calculation and finally to pricing and total-revenue analysis.