

What is Price Elasticity?

Worksheet

Price elasticity of demand (E_d) equals the percentage change in quantity demanded divided by the percentage change in price. $|E_d| > 1$ means demand is elastic; $|E_d| < 1$ means it is inelastic.

Questions

1. Price rises 20%, quantity demanded falls 40%. What is E_d ?

- A) -0.5
- B) -2
- C) -8
- D) 2

2. Which good is typically most inelastic?

- A) Luxury cars
- B) Movie tickets
- C) Insulin
- D) Branded sneakers

3. If $|E_d| = 1$, demand is called:

- A) Perfectly elastic
- B) Unit elastic
- C) Perfectly inelastic
- D) Undefined

4. A price increase on an elastic good will typically:

- A) Increase total revenue
- B) Decrease total revenue
- C) Not affect revenue
- D) Double the price

5. Coffee's price rises from \$4 to \$5 and quantity demanded falls from 100 to 80 cups. Find E_d .

6. A designer bag's price rises 10% and quantity demanded falls 30%. Find E_d .

7. Salt's price rises from \$2.00 to \$2.20 and quantity demanded falls from 500 to 495 units. Find E_d .

8. Define: What is price elasticity of demand?

9. Define: What does $|E_d| > 1$ mean?

10. Define: What does $|E_d| < 1$ mean?

Answer Key

1. B) -2 - $E_d = -40\%/20\% = -2$, so demand is elastic.
2. C) Insulin - Insulin is a necessity with no close substitutes, so demand barely changes with price.
3. B) Unit elastic - $|E_d| = 1$ means the percentage changes in price and quantity are exactly equal - unit elastic.
4. B) Decrease total revenue - For elastic demand, quantity falls proportionally more than price rises, so revenue drops.
5. $\%Q = (80-100)/100 = -20\%$ $\%P = (5-4)/4 = +25\%$ $E_d = -20\% / 25\% = -0.8$ $|E_d| < 1$, demand is inelastic
6. $\%Q = -30\%$ $\%P = +10\%$ $E_d = -30/10 = -3$ $|E_d| > 1$, demand is elastic (luxury good)
7. $\%Q = (495-500)/500 = -1\%$ $\%P = (2.20-2.00)/2.00 = +10\%$ $E_d = -1/10 = -0.1$ very inelastic (necessity, few substitutes)
8. The percentage change in quantity demanded divided by the percentage change in price.
9. Demand is elastic - quantity demanded is very sensitive to price changes.
10. Demand is inelastic - quantity demanded barely responds to price changes.

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