Exercise walk-through

Price Elasticity of Demand ▪ 2.3

eXercise

You must be able to

- define **price elasticity of demand (PED) 需求价格弹性**
- calculate PED using the **midpoint (arc) method 中点法**
- classify demand as **elastic**, **inelastic**, or **unit elastic**
- use the **total revenue test 总收益检验**

Method — PED

$$\text{PED} = \frac{\%\Delta Q_d}{\%\Delta P},$$

using the **midpoint method**, where each percentage change is divided by the **average** of the two values. Take the absolute value.

Method — Classification

$|\text{PED}| > 1$ elastic; < 1 inelastic; $= 1$ unit elastic.

Method — Total revenue test

If demand is **elastic**, cutting price **raises** total revenue; if **inelastic**, raising price raises revenue.

Practice 2.1 ▪ 1 mark

Define price elasticity of demand.

Solution 2.1

Method: Total revenue test

Worked steps

the responsiveness of quantity demanded to a change in price **B1**.

Practice 2.2 ▪ 2 marks

Price rises from $\$10$ to $\$12$ and quantity demanded falls from 100 to 80. Find the PED (midpoint method).

Solution 2.2

Method: PED

Worked steps

$\%\Delta Q = \dfrac{-20}{90} = -22\%$; $\%\Delta P = \dfrac{2}{11} = 18\%$; $|\text{PED}| = \dfrac{22}{18} \approx 1.2$ M1 A1.

Practice 2.3 ▪ 1 mark

State whether demand is elastic or inelastic if $|\text{PED}| = 0.5$.

Solution 2.3

Worked steps

inelastic **B1**.

Exam-style 3.1 ▪ 1 mark

Demand is elastic when $|\text{PED}|$ is

A less than 1

B equal to 1

C greater than 1

D zero

Solution 3.1

A less than 1

B equal to 1

C greater than 1 ✓

D zero

Worked steps

C.

Exam-style 3.2 ▪ 1 mark

If demand is inelastic, raising the price will

A raise total revenue

B lower total revenue

C leave revenue unchanged

D raise quantity demanded

Solution 3.2

Method: Total revenue test

A raise total revenue ✓

B lower total revenue

C leave revenue unchanged

D raise quantity demanded

Worked steps

A.

Exam-style 3.3 ▪ 1 mark

A good has few substitutes and takes only a small share of income.
(a) State whether its demand is likely elastic or inelastic.
(b) If the firm wants more revenue, state whether it should raise or lower the price.
(c) Name one determinant of PED.

Solution 3.3

Method: Total revenue test

Worked steps

(a) inelastic **B1**. (b) raise the price **B1**. (c) any one of: availability of substitutes, share of income, time **B1**.