

2.2 Price elasticity, income elasticity and cross elasticity of demand

Name: _____ Class: _____ Date: _____

Total: 19 marks

KEY WORDS elasticity of demand

• cross elasticity of demand

• price elasticity of demand

• total revenue

• cross (xed)

Objective

Build the skills to answer exam questions on **elasticity of demand (PED)**, **income (YED)** and **cross (XED)** their formulae, and the link between **PED and total revenue**.

– price elasticity,

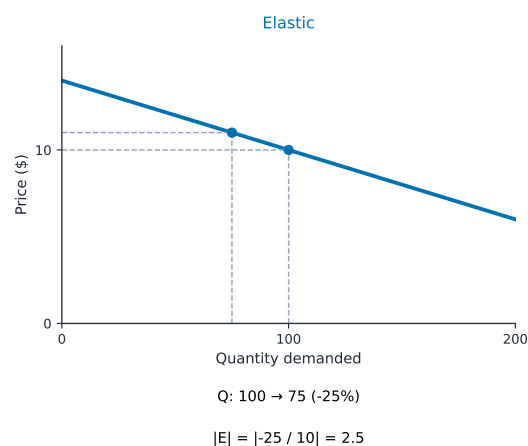
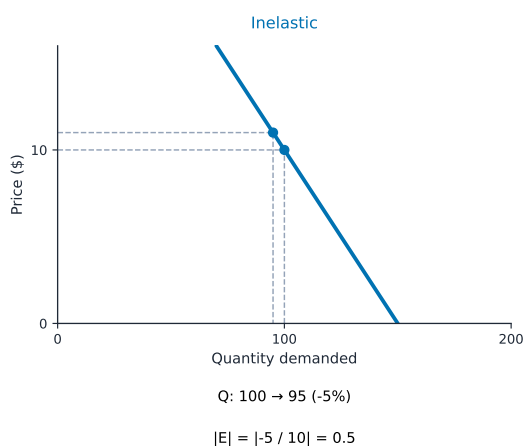
You must be able to:

- calculate and interpret PED, YED and XED
- classify goods (elastic/inelastic; normal/inferior; substitute/complement)
- analyse the link between PED and total revenue

1 Key knowledge and worked examples

■ The three elasticities

Price: 10 → 11 (+10%); both quantities start at 100



Inelastic: quantity barely moves; elastic: quantity moves a lot

$$\text{PED} = \frac{\% \Delta Q_d}{\% \Delta P} \quad \text{YED} = \frac{\% \Delta Q_d}{\% \Delta Y} \quad \text{XED} = \frac{\% \Delta Q_{d,A}}{\% \Delta P_B}$$

- **PED:** price +10%, quantity $-25\% \rightarrow \frac{-25}{10} = -2.5 \rightarrow$ **elastic** (ignore the sign).
- **YED:** income +20%, demand +30% $\rightarrow +1.5 \rightarrow$ **normal**, a **luxury** (>1).
- **XED:** tea price +10%, coffee +4% $\rightarrow +0.4 \rightarrow$ **substitutes** (positive).
- **TR link:** if demand is inelastic, a price **rise** raises total revenue; if elastic, a price **fall** raises it.

Answer shapes: AO1 + AO2 + AO3 (analysis) + AO4 (judgement, for evaluate questions).

2 Practice

2.1 Define *price elasticity of demand (PED)*. [2]

2.2 The price of a good falls by 5% and quantity demanded rises by 15%. Calculate the PED and classify the demand. [2]

2.3 A 10% rise in income causes a 4% fall in demand for a good. Calculate the YED and classify the good. [2]

3 Exam-style questions

3.1 A good has a PED of 0.4. To raise total revenue, the firm should: [1]

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- A lower the price
- B raise the price
- C keep the price the same
- D stop producing the good

3.2 When the price of good B rises by 20%, the demand for good A rises by 5%.

(a) Calculate the cross elasticity of demand (XED). [2]

(b) State, with a reason, the relationship between goods A and B. [2]

3.3 Discuss the usefulness of price elasticity of demand to a firm setting its prices. [8]
