

2.2 Price elasticity, income elasticity and cross elasticity of demand

Name: _____ Class: _____ Date: _____

Total: 19 marks

KEY WORDS elasticity of demand • price elasticity of demand
 • cross elasticity of demand • total revenue • cross (xed)

Objective

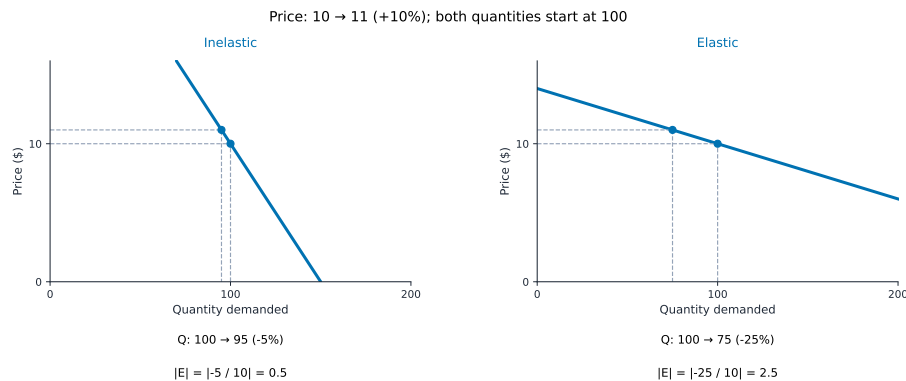
Build the skills to answer exam questions on **elasticity of demand (PED)**, **income (YED)** and **cross (XED)** – price elasticity, their formulae, and the link between **PED and total revenue**.

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



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

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

- **PED:** price +10%, quantity -25% → $\frac{-25}{10} = -2.5$ → **elastic** (ignore the sign).
- **YED:** income +20%, demand +30% → +1.5 → **normal**, a **luxury** (>1).
- **XED:** tea price +10%, coffee +4% → +0.4 → **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]

- ☐ **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]
