

2.2 Price elasticity, income elasticity and cross elasticity of demand

Name: _____ Class: _____ Date: _____ **Total: 19 marks**

KEY WORDS elasticity of demand 需求弹性 • price elasticity of demand 需求价格弹性
• cross elasticity of demand 需求交叉弹性 • total revenue 总收益 • cross (xed) 交叉弹性

Objective

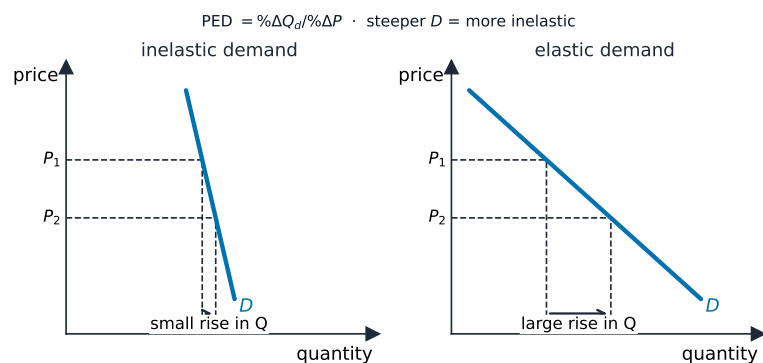
Build the skills to answer exam questions on **elasticity of demand** 需求弹性 — **price (PED)** 价格弹性, **income (YED)** 收入弹性 and **cross (XED)** 交叉弹性 elasticity, their formulae, and the link between **PED and total revenue** 总收益.

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 Worked examples

■ The three elasticities



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

- **PED:** price +10%, quantity -25% $\rightarrow \frac{-25}{10} = -2.5 \rightarrow$ **elastic** (ignore the sign).
- **YED:** income +20%, demand +30% $\rightarrow +1.5 \rightarrow$ **normal**, a **luxury** 奢侈品 (>1).
- **XED:** tea price +10%, coffee +4% $\rightarrow +0.4 \rightarrow$ **substitutes** 替代品 (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 | B |
| C | D |
- 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]
