

Exercise walk-through

Other Elasticities ■ 2.5

eXercise

You must be able to

- define and calculate **cross-price elasticity of demand** 交叉价格弹性
- use its sign to classify goods as **substitutes** or **complements**
- define and calculate **income elasticity of demand** 收入弹性
- use its sign to classify goods as **normal** or **inferior**

Method — Cross-price elasticity

$$XED = \frac{\% \Delta Q_d \text{ of good A}}{\% \Delta P \text{ of good B}}.$$

Positive → substitutes; **negative** → complements.

Method — Income elasticity

$$YED = \frac{\% \Delta Q_d}{\% \Delta \text{income}}.$$

Positive → normal good; **negative** → inferior good.

Practice 2.1 ■ 1 mark

State what a **positive** cross-price elasticity means about two goods.

Solution 2.1

Method: Cross-price elasticity

Worked steps

they are substitutes **B1**.

Practice 2.2 ■ 1 mark

State what a **negative** income elasticity means about a good.

Solution 2.2

Method: Income elasticity

Worked steps

it is an inferior good **B1**.

Practice 2.3 ■ 2 marks

When income rises 10%, demand for a good falls 5%. Find the income elasticity and classify the good.

Solution 2.3

Method: Income elasticity

Worked steps

$$\text{YED} = \frac{-5\%}{10\%} = -0.5; \text{ negative, so it is an } \mathbf{\text{inferior}} \text{ good } \text{M1} \text{ A1}.$$

Exam-style 3.1 ■ 1 mark

Two goods with a **negative** cross-price elasticity are

- A substitutes
- B complements
- C normal goods
- D inferior goods

Solution 3.1

Method: Cross-price elasticity

- A substitutes
- B complements
- C normal goods
- D inferior goods



Worked steps

B.

Exam-style 3.2 ■ 1 mark

A normal good has an income elasticity that is

A negative

B zero

C positive

D infinite

Solution 3.2

Method: Income elasticity

A negative

B zero

C positive



D infinite

Worked steps

C.

Exam-style 3.3 ■ 2 marks

The price of tea rises 20% and the quantity of coffee demanded rises 10%.

- (a) Find the cross-price elasticity.
- (b) State whether tea and coffee are substitutes or complements.

Solution 3.3

Method: Cross-price elasticity

Worked steps

$$(a) \text{ XED} = \frac{+10\%}{+20\%} = +0.5 \quad \text{M1 A1}. \quad (b) \text{ substitutes (positive XED) } \quad \text{B1}.$$