Chapter 5

Put into practice questions

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If the price changes by 5 per cent and the quantity demanded changes by 2.5 per cent, what is the value of the price elasticity of demand?

-0.5

If the price increases from 10p to 12p, and the quantity demanded falls from 50 units to 45 units, what is the price elasticity of demand?

-10%/+20% = -0.5

If the price elasticity of demand is −0.5, what is the effect of a change in quantity demanded of:

a. A 10 per cent rise in price? 5% fall in quantity demanded
b. A 4 per cent fall in price? 2% increase in quantity demanded

Four hundred units of a product are sold. If the price elasticity of demand is −2 and the price is cut by 5 per cent, what will the new quantity demanded be?

Change in quantity demanded is +10%; this means an extra 40 units

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Calculate the price elasticity of demand for the following examples:

- **The price increases from £10 to £12 and the quantity demanded falls from 400 units to 300 units**
  Answer: -25%/+20%= -1.25

- **The price increases from £10 to £12 and the quantity demanded rises from 400 units to 500 units.**
  Answer: +25%/+20% = +1.25

- **The price decreases from £40 to £30 and the quantity demanded increases from 50 units to 55 units.**
  Answer: +10%/ -25%

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The table shows a demand schedule for a product. Within what price range is the price elasticity of demand −2.5?

Price (£)	Quantity demanded
10	40
9	50
8	60
7	70
6	80

Price changes from £10 to £9; Quantity demanded changes 40 to 50 units;
So price elasticity of demand = +25%/-10% = -2.5

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What do you expect the effect on the price elasticity of demand for a product to be in the following situations?

- A competitor enters the market with a similar product.
  Answer: Increase price elasticity

- A firm invests in a successful advertising campaign for the product.
  Answer: Reduces price elasticity

- The product is technologically advanced and has patent protection, meaning that it cannot be copied by others for several years.
  Answer: Reduces price elasticity

Are the following statements true or false?

a. The price elasticity of demand on a downward-sloping demand curve is negative. TRUE
b. If the price elasticity of demand is −2, this means that demand is price inelastic. FALSE
c. If a 5 per cent change in price changes the quantity demanded by 20 per cent, then demand is price elastic. TRUE
d. If the price elasticity of demand is −0.5, then a 20 per cent increase in price reduces the quantity demanded by 10 per cent. TRUE

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Consider the following two situations:

a. The price of a product is increased from £10 to £11. The quantity demanded falls from 50 units to 30 units.

b. The price of a product is increased from £10 to £11. The quantity demanded falls from 50 units to 49 units.

Answer the following questions for each situation:
<u>Situation 1</u>

- **What is the price elasticity of demand?**

Price elasticity of demand= -40%/+10% = -4

- **What is the original total revenue before the price change?**

£10*50= £500

- **What is the new total revenue after the price change?**

£11 * 30 = £330

- **The conclusion is that when demand is price elastic,**

Total revenue will decrease following a price increase

<u>Situation 2</u>

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Are the following statements true or false?

a. If demand is price elastic, a price fall increases revenue. FALSE
b. If demand is price inelastic, a price increase decreases revenue. FALSE
c. If demand has unit price elasticity, then a price change has no effect on revenue. TRUE
d. Demand has a constant value along a demand curve. FALSE

Figure 5.12 shows that:

a. Demand is price elastic
b. Demand is price inelastic
c. Demand has unit price elasticity
d. Demand has 0 price elasticity.

Answer is D. A change in price has no effect at all on the quantity demanded.

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The average income in an area increases from £40,000 per year to £60,000 per year. Sales of carpets increase by 10 per cent. Calculate the income elasticity of demand for this product. Is demand for it income elastic or inelastic?

- Quantity demanded increases +50%
- Income elasticity of demand = +50%/+10% = +5
- Income elastic.

What would it mean if the income elasticity of demand for a product were to be zero?

It would mean that changes in income have no effect on the quantity demanded

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Which of the following options A, B, C, or D shows demand which has an income elasticity of more than 1?

Increase in income is 10%. C and D are both income elastic as the percentage change in income is greater than 10%.

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Following the fall of the price of product, X by 10%, the following changes occur

Demand for X is price inelastic as the % change in quantity demanded is less than the percentage change in price.

The relationship between X and Y is that there are
Substitutes
Cannot tell the relationship
Complements
Inferior goods

Answer: X and Y are substitutes; the price of X increases and demand for Y increases.

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1. Which of the following statements are true and which are false?

a. The cross-price elasticity of demand for substitutes is positive. TRUE
b. The income elasticity of demand for an inferior good is negative. TRUE
c. A Giffen good has a positive price elasticity of demand. TRUE
d. A normal good has a negative price elasticity and a positive income elasticity of demand. TRUE

End of chapter put into practice questions

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The price elasticity of demand is −0.8. The price rises by 5 per cent. Sales were 2,000 units. What was the old revenue and what is the new revenue?

- Original revenue (assume price is £10): £10 * 2000= £20000.
- New sales will be 4% lower i.e. 80 units
- New sales revenue = £10.50 * 1920= £20160

The income elasticity of demand is + 1.5. Sales have increased from 4,000 units to 4,500 units following a change in income. Originally the average income was £30,000. What did it change to?

Sales have increased by 12.5%

If income elasticity is +1.5 this means income increases by 12.5/1.5 = 8.33%
Income will increase by 8.33% to £32500

The cross-price elasticity of demand for product A with regard to changes in the price of B is + 25. Calculate the effect on the quantity demanded of A if the price of B falls by 2 per cent.

If price falls 2% the fall in quantity demanded will be 50%.

The quantity demanded of a product falls from 5,000 units to 4,000 units when the price rises from £30 to £32. Calculate the price elasticity of demand.

Price elasticity of demand = -20%/+ 6.67% = -3

The price of product B increases from £50 to £55. The quantity demanded of A falls from 6,000 to 4,000 units. What is the cross-price elasticity of demand for A relative to B?

Cross price elasticity = -33.3%/ +10% = -3.33

If demand for a product is unit elastic then, for a given percentage increase in price, total revenue will:

a. Fall by the same percentage.
b. Increase by the same percentage.
c. Remain unchanged.
d. Fall by a smaller percentage.

Explain your answer.

Answer c. remain unchanged.

An increase in income by 20 per cent will:

a. Increase Demand For Z. TRUE
b. Decrease Demand For X By 4 Per Cent. FALSE
c. Decrease Demand For Y By 50 Per Cent. FALSE
d. Increase Demand For X By 4 Per Cent. TRUE

Which of the following diagrams in figure 5.16 shows

a. An inferior good?
Diagram D

b. A good with an income elasticity of 0?
Diagram C

c. A good with an income elasticity of more than 1
Diagram B

d. A good with an income elasticity of more than 1
Diagram A

A product X is an inferior good with no close substitutes. It is a complement to Y. Which best describes X?

Answer is C