1.12 Price Elasticity of Demand: Determinants and Business Applications: Test Pack

AQA 7136 · Calculators not allowed · about 20 minutes

Total Marks

Name: _____ Date: ____ / ____ / _____

Answer all questions. Allocate most time to the final 15-mark essay. No calculator is allowed. Show working for all calculations.

1 Define price elasticity of demand (PED) and give its formula as used by firms when assessing how quantity demanded responds to price changes for a retail product such as a shirt.

(Total for Question 1 is 1 mark)

2 Short applied classification: addictiveness and habit formation effect on PED.

(a) State whether nicotinegum is likely to have higher or lower PED than chocolate bars and give one reason. **(1)**

(b) Give one policy implication for governments from the low PED of addictive products. **(1)**

(Total for Question 2 is 2 marks)

3 State what is meant by demand being price elastic, in terms of the PED coefficient and percentage responses, with reference to a digital app product.

(Total for Question 3 is 1 mark)

© Revision Library | revisionlibrary.co.uk

4 Short classification: necessity versus luxury and time period effect.

(a) State whether demand for insulin (a life-preserving medicine) is likely to be price elastic or inelastic and give a one-sentence reason. **(1)**

(b) Explain briefly why demand for consumer electronics tends to become more elastic over time after an initial price rise. **(1)**

(Total for Question 4 is 2 marks)

---

5 Another PED calculation for a coffee shop using whole numbers and midpoint method.

(a) A coffee shop increases the price of a cappuccino from £2 to £3 and daily sales fall from 300 cups to 200 cups. Using the midpoint method, calculate the PED to two decimal places. Show working. **(3)**

(b) Classify the elasticity and explain briefly how total revenue for the coffee shop will change after the price rise. **(1)**

(Total for Question 5 is 4 marks)

---

6 Total revenue test for a retailer's bottled water using whole numbers.

(a) A shop sells bottled water for £1 each and sells 500 per week. The shop raises price to £1.20 and weekly sales fall to 450. Calculate total revenue before and after the price change and state whether demand appears elastic, inelastic or unitary using the total revenue test. **(3)**

(b) Give one reason why the total revenue test might give a different conclusion from an arc PED calculation. **(1)**

(Total for Question 6 is 4 marks)

© Revision Library | revisionlibrary.co.uk

Mark scheme · 1.12 Price Elasticity of Demand: Determinants and Business Applications: Test Pack

Question 1

a measure of the responsiveness of quantity demanded to a change in price, with formula PED = % change in quantity demanded / % change in price **B1**

Answer: PED = percentage change in quantity demanded divided by percentage change in price; it measures responsiveness of quantity demanded to price changes.

Question 2

(a) nicotine gum likely has lower PED because addiction/habit makes demand less responsive to price changes compared with discretionary goods like chocolate **B1**

(a) Answer: Nicotine gum likely has lower PED than chocolate bars because habit and addiction reduce responsiveness to price changes.

(b) governments can use taxation to reduce consumption and raise revenue because price rises have limited effect on quantity, though equity and health impacts must be considered **B1**

(b) Answer: Policy implication: higher taxes can reduce consumption slightly and raise government revenue because demand is relatively inelastic, but distributional concerns remain.

Question 3

price elastic means PED > 1, so the percentage change in quantity demanded is greater than the percentage change in price **B1**

Answer: Price elastic means PED greater than 1; quantity demanded changes by a larger percentage than the price change.

Question 4

(a) price inelastic because it is a necessity with few or no substitutes, so quantity demanded changes little as price changes **B1**

(a) Answer: Price inelastic, because it is a necessity with no close substitutes.

(b) over time consumers find substitutes, adjust budgets or delay purchases, and more information becomes available, making demand more responsive to price changes **B1**

(b) Answer: Over time consumers find substitutes and adjust behaviour, so demand becomes more responsive to price changes.

Question 5

(a) percentage change in quantity = (200 - 300) / ((200 + 300)/2) x 100 = -100 / 250 x 100 = -40.00% **M1**

(a) percentage change in price = (3 - 2) / ((3 + 2)/2) x 100 = 1 / 2.5 x 100 = 40.00% **M1**

(a) PED = 40.00% / 40.00% = 1.00 (awrt), absolute value **A1**

(a) Answer: PED (arc) = 1.00.

(b) unitary elastic (PED = 1); total revenue remains approximately unchanged because the percentage fall in quantity equals the percentage rise in price **B1**

(b) Answer: Demand is unitary elastic, so total revenue will stay roughly the same after the price rise.

Question 6

(a) initial revenue = 1.00 x 500 = £500 **M1**

(a) new revenue = 1.20 x 450 = £540 **M1**

(a) since revenue rose after the price increase, demand is price inelastic over this range **A1**

(a) Answer: Revenue rises from £500 to £540, so demand appears inelastic.

(b) total revenue test is a quick sign test and can be affected by large discrete changes, while arc PED uses percentage changes and is more precise; also differences can arise from rounding or from non-linear demand curves **B1**

(b) Answer: The total revenue test is a simple sign test and can differ due to rounding, discrete changes or non-linear demand; arc PED is more precise using percentage changes.

© Revision Library | revisionlibrary.co.uk