

**Chapter 1.2: Elasticities****Question 1**

The following is a demand schedule for good Z.

Price per unit (\$)	5	10	15	20	25	30
Q demanded per week	30	25	20	15	10	5
Total Revenue						

- Plot the demand curve for good Z to show it is linear.
- Calculate price elasticity of demand (*PED*) for an increase in price from \$5 to \$10.
- Calculate price elasticity of demand (*PED*) for an increase in price from \$20 to \$25.
- Using your results of parts (b) and (c), explain what happens to *PED* along a straight-line demand curve.
- Calculate the percentage change in quantity demanded that will result from an increase in price of 10% if ***PED* = 2**, noting if quantity increases or decreases.
- Calculate total revenue that corresponds to each price and quantity combination.
- Using the concepts of price elastic and price inelastic demand and your calculation of *PED* for a price increase from \$5 to \$10 in part (b), explain what happens to total revenue as a result of the increase in price of good Z.
- Using the concepts of price elastic and price inelastic demand and your calculation of *PED* for a price increase from \$20 to \$25 in part (c), explain what happens to total revenue as a result of the increase in price of good Z.
- Using respective formulae, explain the difference between the slope and price elasticity of demand along a straight-line demand curve.
- State the numerical values of perfectly elastic and perfectly inelastic demand, and draw diagrams to illustrate the difference between them.
- Explain what will happen to quantity demanded if price increases by 5% and ***PED* = 0**.

**Question 2**

**The price of meat increases by 10%, the quantity demanded of meat falls by 12% and the quantity of fish consumed increases by 9%. Answer parts (a) and (b) on the basis of this information**

- Calculate the price elasticity of demand for meat, and state if the demand for meat is price elastic or inelastic.
- Calculate the cross-price elasticity of demand between meat and fish, and outline the relationship between meat and fish.

**The price of pizzas falls by 15%, the quantity of pizzas demanded increases by 14% and the quantity of colas consumed increases by 17%. Answer parts (c) and (d) on the basis of this information**

- Calculate the price elasticity of demand for pizzas, and state if the demand for pizzas is price elastic or inelastic.
- Calculate the cross-price elasticity of demand for pizzas and colas, and outline the relationship between pizzas and colas.

**Your annual income increased from \$16 000 to \$20 000. Your spending on purchases of bread fell by 5%, while your spending on purchases of food in general and eating out in restaurants increased by 15% and 30% respectively. Answer parts (e) and (f) on the basis of this information**

- e. Identify the relevant elasticity of demand concept, and use it to calculate this demand elasticity for each of the three items.
- f. Using the elasticity values you have calculated, outline which item is likely to be an inferior good, a necessity and a luxury good.

**It is found that when the price of good X increased by 5%, the quantity of X supplied increased by 2% after one month and by 7% after one year. Answer parts (g), (h) and (i) on the basis of this information**

- g. Calculate price elasticities of supply for the two time periods.
- h. Outline in which period supply was price elastic and in which it was price inelastic.
- i. Outline two possible factors that might account for the different elasticity values.
- j. Explain what will happen to quantity supplied if price increases by 10% and **PES = 0**.

### **Question 3**

**When the price of good Alpha increases from \$100 to \$125, the quantity of good Beta purchased falls from 10 units to 8 units. Answer parts (a) and (b) on the basis of this information**

- a. Calculate the cross-price elasticity of demand for Alpha and Beta.
- b. State the relationship between Alpha and Beta.

**The following table provides cross-price elasticity (XED) values for five pairs of goods. Answer parts (c) and (d) on the basis of this information**

Pair	A & B	C & D	E & F	G & H	I & J
XED	0.3	0.7	-0.4	-0.8	0

- c. Explain the likely relationship between the goods in each pair.
- d. Explain how this relationship compares for,
  - i. Pairs A & B and C & D
  - ii. Pairs E & F and G & H.
- e. A firm that produces desktop and laptop computers estimates the cross-price elasticity of demand for the two types of computer is +1.2. The firm plans to lower the price of its desktop computers by 10% to encourage sales. Explain the likely effects of this pricing decision on its sales of laptops.
- f. Outline why the mathematical value of PED is usually negative.
- g. State the numerical values of perfectly elastic and perfectly inelastic supply, and draw diagrams to illustrate the difference between them.
- h. Draw two unitary elastic supply curves in the same diagram, showing their point of intersection.
- i. Draw a price elastic and a price inelastic supply curve, and outline how you distinguish between them.
- j. Using respective formulae outline the difference between the slope of a linear supply curve and price elasticity of supply along a supply curve.