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SLDT-A

- 1) when price of a good is ₹13 per unit, the consumer buys 11 unit of that good. when price rises to ₹15 per unit, the consumer continues to buy 11 units. Calculate price of Elasticity of demand

given that

$$P_1 = ₹13, P_2 = ₹15$$

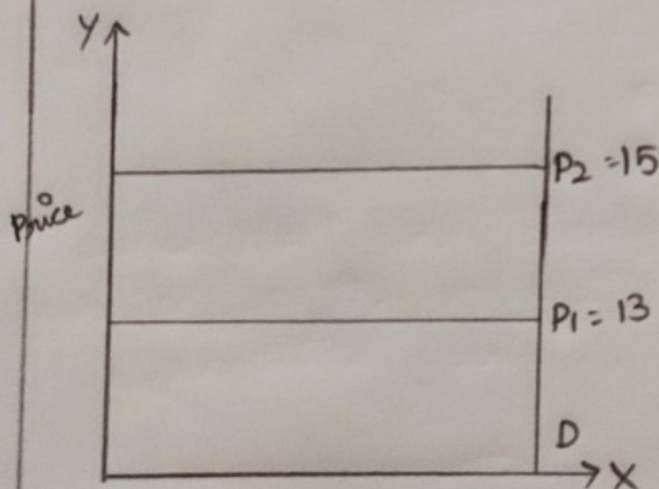
$$Q_1 = 11, Q_2 = Q_2 = 11$$

$$\Delta P = P_2 - P_1$$
$$\Delta Q = Q_2 - Q_1$$

$$(E_d = \frac{P_1}{Q_1} \times \frac{\Delta Q}{\Delta P}) \Rightarrow$$

$$E_d = \left(\frac{13}{11} \times \frac{0}{2} \right) = \underline{\underline{0}}$$

Perfectly Inelastic demand



The demand remains constant whatever the price may be

Price vs Demand

Q2) given that

$$P_1 = ₹12, Q_1 = 24$$

$$P_2 = ₹14, Q_2 = 20$$

find price elasticity of demand?

$$E_p = \frac{P}{Q} \times \frac{\Delta Q}{\Delta P}$$

$$\Delta Q = Q_2 - Q_1$$

$$\Delta P = P_2 - P_1$$

$$E_p = \frac{12}{24} \times \left(\frac{-4}{2} \right) = \left(\frac{1}{2} \right) (-2) = -1$$

Relatively Inelastic demand

Q3) given that

$$\text{let change in demand} = 0.50$$

$$\text{change in income} = 0.75$$

$$ed = \frac{0.50}{0.75} = \frac{2}{3}$$

$$ed = 0.6667$$

Q4) given that

$$\rightarrow \text{increase in income} = \left\{ \frac{50000 - 30,000}{(50,000 + 30,000)/2} \right\}$$

$$= \frac{20000}{(80000)/2} = \frac{20000}{40000}$$

$$= \frac{1}{2} = 50\%$$

\rightarrow Percentage increase in demand of cars

$$= \frac{600,000 - 450,000}{(600,000 + 450,000)/2}$$

$$= \frac{150,000}{525,000} = 28.58\%$$

\rightarrow percentage of increase in Buses

$$= \frac{(7000 - 10,000)}{(17,000)/2}$$

$$= \frac{-3000}{8500} = -0.3529\%$$

(f) increase in elasticity of demand of car

$$ed = \frac{28.57/100}{50/100} = 0.57 \cdot 57\%$$

Increase elasticity a demand of buses

$$ed = -\frac{35.29/100}{50/100} = -0.71 \} = -71\%$$

→ car is normal good because $ed > 0$

→ Buses is inferior good because $ed < 0$

Q5 find cross elasticity
given

$$\Delta \text{ income} = 12\%$$

$$\Delta \text{ price} = 15\%$$

cross elasticity of demand

$$\text{cross cross elasticity} = \frac{\% \text{ change in quantity demand for } x}{\% \text{ change in price of good } y}$$

$$= \frac{12\%}{15\%}$$

$$= \frac{12/100}{15/100}$$

$$= 0.67$$

Since the cross elasticity of demand is positive, so the product x and y are substitute goods

Q6 find cross-price elasticity of demand

$$\Delta \text{price} = 0.50 (\Delta P)$$

$$\Delta Q = 24 - 30 = \underline{\underline{-6}}$$

$$\% \Delta \text{price} = \frac{\Delta P}{P} \times 100 = \frac{0.50}{3.00} \times 100 = 16.67\%$$

$$\% \text{ Quantity} = \frac{-6}{30} \times 100 = -20\%$$

cross-ed = $\frac{\% \text{ change in qty demanded of good } x}{\% \text{ change in price of good } y}$

$$= \frac{-20\%}{16.67\%} = \frac{-20}{100} \div \frac{16.67}{100} = -1.20$$

Since the cross elasticity is negative, which means both are complements product (x, y)