



PRESIDENCY COLLEGE
(Autonomous)



*Reaccredited by
NAAC with A+*

Microeconomics

Elasticity of Demand

Presidency
Group

OVER
40
YEARS
OF ACADEMIC
WISDOM



PRESIDENCY COLLEGE
(AUTONOMOUS)

AFFILIATED TO BENGALURU CITY UNIVERSITY, APPROVED BY AICTE, DELHI & RECOGNISED BY THE GOVT. OF KARNATAKA

RE-ACCREDITED BY NAAC WITH 'A+' GRADE



Slope Vs Elasticity



Price (Rs)	Quantity (Units)
1	10
2	8
3	6
4	4
5	2

$$\text{Slope} = \frac{\Delta Q}{\Delta P}$$

$$\text{Elasticity} = \frac{\Delta Q}{\Delta P} \times \frac{P}{Q}$$



Slope Vs Elasticity

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Price (Rs)	Quantity (Units)
1	10
2	8
3	6
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5	2

$$\text{Elasticity} = \frac{\Delta Q}{\Delta P} \times \frac{P}{Q}$$

$$e_p = \frac{Q_2 - Q_1}{P_2 - P_1} \times \frac{P}{Q}$$

$P/Q \Rightarrow$ Initial Price & Initial Qty

E_p for Price 2 to Price 3

Initial Price 2, Initial Qty 8

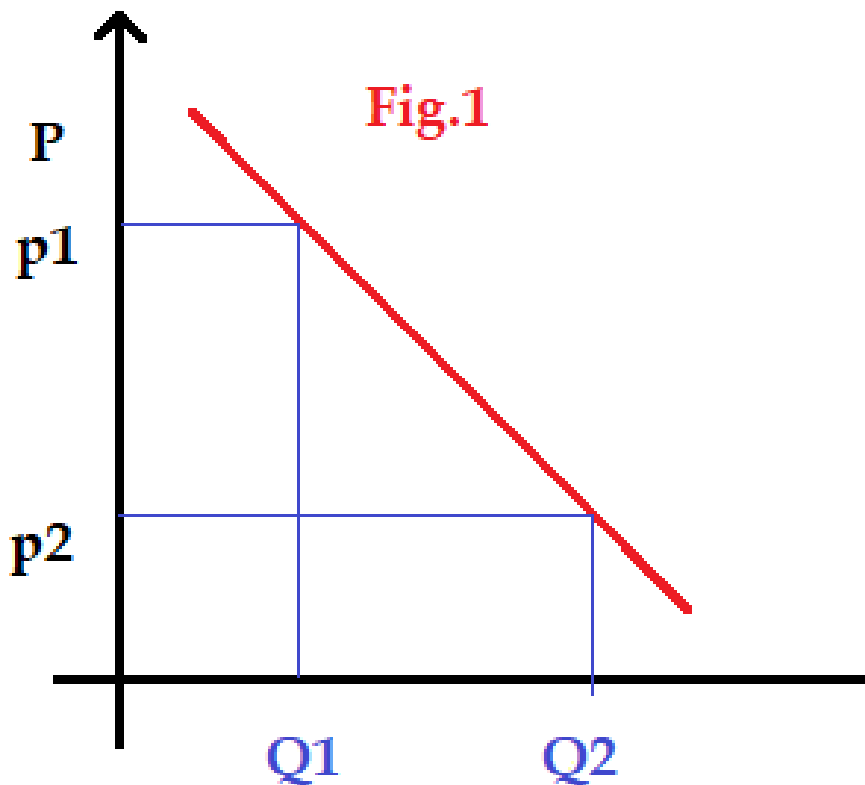
$$\begin{aligned} E_p &= \frac{(8-6)}{(2-3)} \times \frac{2}{8} \\ &= \frac{2}{-1} \times \frac{1}{4} \\ &= -2 \times 0.25 \\ &= -0.5 \end{aligned}$$

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Price Elasticity of Demand



$$\frac{\Delta Q}{\Delta P} = 1$$

$$\frac{Q_2 - Q_1}{P_2 - P_1} = 1$$

$$\frac{5 - 3}{7 - 5} = \frac{2}{2}$$

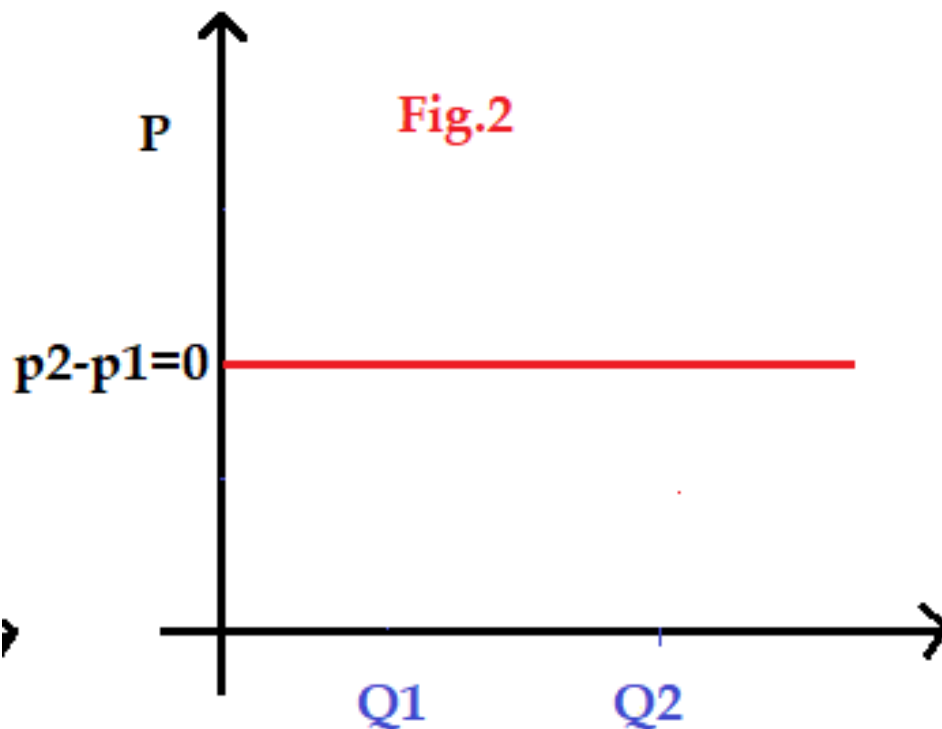
Slope for demand is -ve

Unit Elasticity:

$$\Delta Q = \Delta P$$

Proportion of change in Q
= Proportion of change in P





$$D.q / D.p = \text{infinite}$$

$$D.q / 0 = \text{Infinite}$$

$$P_2 - P_1 = 0$$

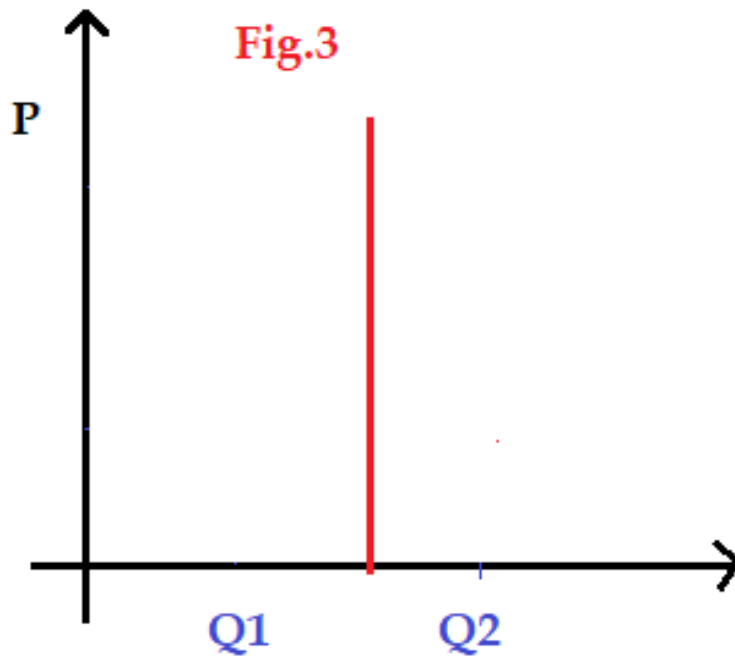
No change in P, change in quantity

Change in Price = 0

$E_p = \text{Infinite}$

Perfectly Elastic Demand*





$$D.q / D.p = 0$$

$$0 / D.p$$

$$Q2 - Q1 = 0$$

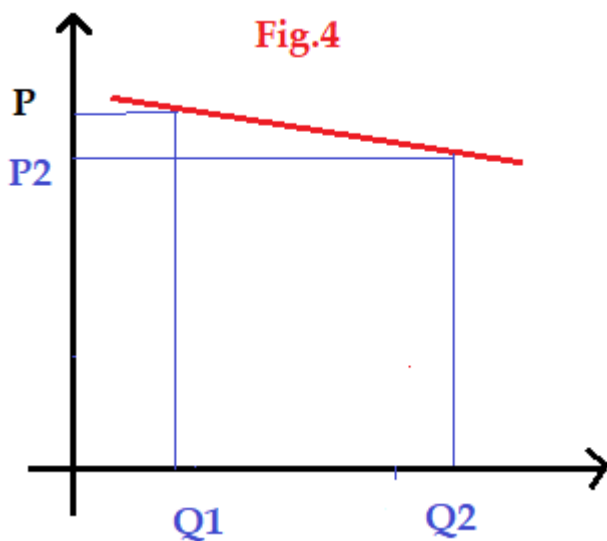
change in Quantity has to be Zero

Change in Quantity = 0

$$E_p = 0$$

Perfectly Inelastic Demand*





$$D.q > D.p$$

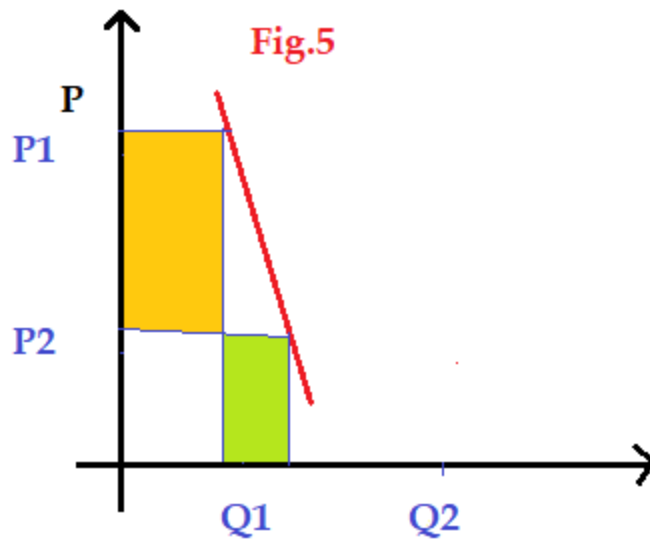
$$E_p > 1$$

Change in Q > Change in P

$$E_p > 1$$

Relatively Elastic Demand*





$$D.q < D.p$$

$$E_p < 1$$

Change in Qty < Change in Price

$$E_p < 1$$

Relatively Inelastic demand.*





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Price Elasticity of Demand

- 1) Perfectly elastic demand,
- 2) Perfectly inelastic demand,
- 3) Relatively elastic demand,
- 4) Relatively inelastic demand, and
- 5) Unitary elastic demand.

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