

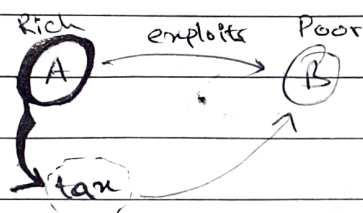
\* Economics.

- 17/01/2023
- 18/01/2023
- 19/01/2023
- 01/02/2023
- 02/02/2023
- 22/02/2023
- 23/02/2023

- distributing <sup>utilising</sup> and organising <sup>limited</sup> resources/wealth of a country.
- INTRODUCTION: What is Economics?
- Raja → Sena → Praja. Morality, Ethics. Chandrakya?
- Adams Smith: Father of Modern Economics

→ Thought Generation:

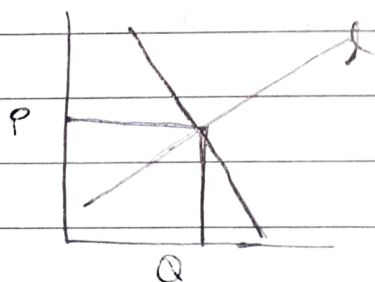
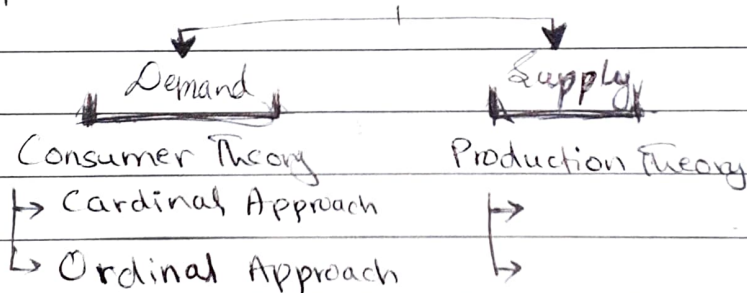
- Merchantisation?
- Communism: ?? Communism?
- Socialism: ✓



	Labour	Profit	Loss
Capitalist	00	10	
Worker	01	00	?

Comparison: Ghode & Slackers (B)

Capitalism: Market Mechanism.



Market { Perfect Competition Market  
Monopoly Market

18/01/2022

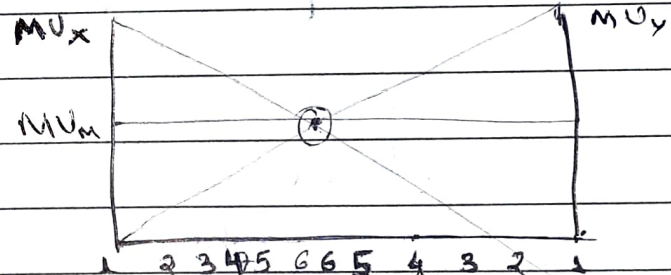
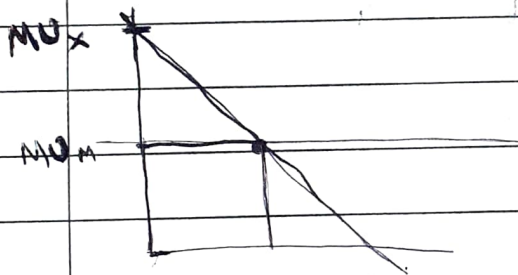
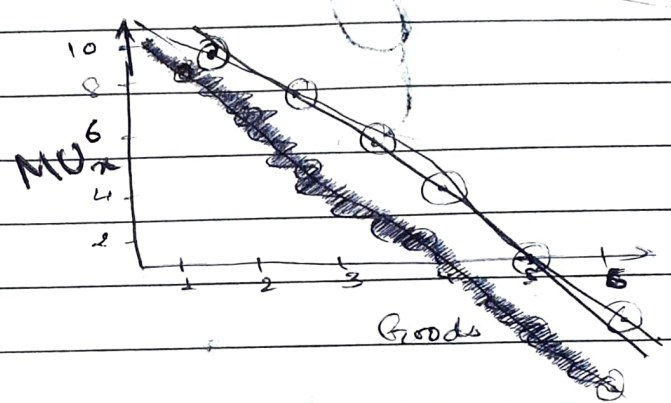
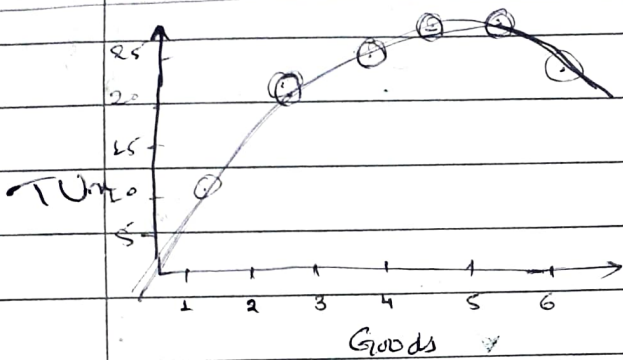
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Metric in Consumer Theory:

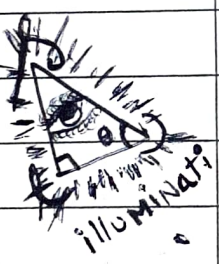
- Cardinal Approach (that can be measured):
- Ordinal Approach (Comparison with other goods).

Discussed with utility / satisfaction for both Approaches.

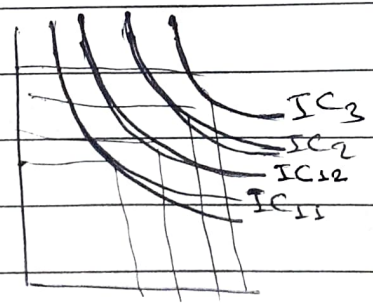
Unit of goods ( $Q_n$ )	Total Utility ( $TU_x$ )	Marginal Utility ( $MU_n = \frac{\Delta TU_n}{\Delta Q_n}$ )
1	10	10
2	18	8
3	23	5
4	25	2
5	25	0
6	20	-5



$MU_x = MU_y = MU_m$



Indifference Curve.



Combination	X good	Y good	MRS
A	1	24	4
B	2	10	3
C	3	7	2
D	4	5	1
E	5	4	

MRS: Marginal Rate of Success

$MRS = \frac{\Delta Y}{\Delta X}$

13/01/2023

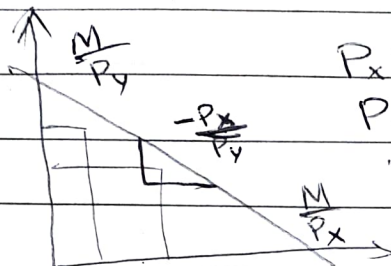


$$TU = MU_x X + MU_y Y$$

$$0 = MU_x \Delta X + MU_y \Delta Y$$

$$MU_x \Delta X = -MU_y \Delta Y$$

$$\frac{MU_x}{MU_y} = -\frac{\Delta Y}{\Delta X} = MRS_{yx}$$

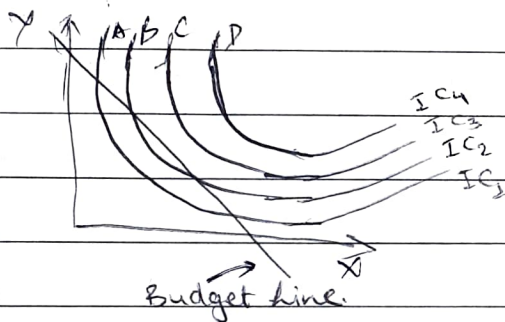


$$P_x X + P_y Y = M$$

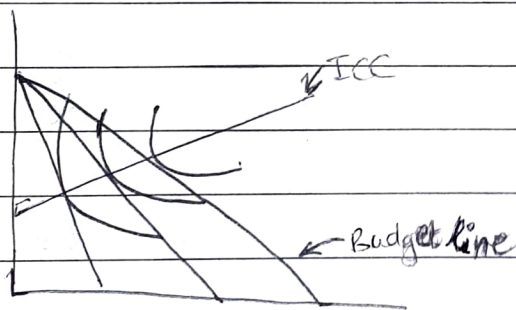
$$P_y Y = M - P_x X$$

$$Y = \frac{M}{P_y} - \frac{P_x}{P_y} X = \frac{M}{P_y} - \frac{P_x}{P_y} X$$

$$y = a - bX$$



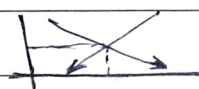
Level of Satisfaction kaha pe Igada  
hoga wohi pe invest kasega / wohi  
Samam kharidega.



01/02/2023

- Demand and Supply.

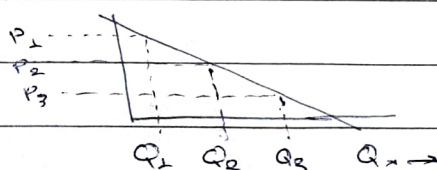
• Demand:

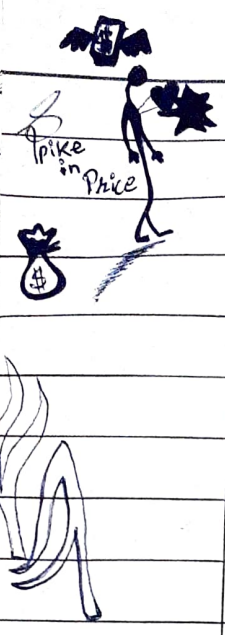


$$Q_x = f(P_x, Y, P_r, P_{n-1}, T, E_p, E_g, U)$$

Law of Demand :

When price decreases, demand increases, when price increases, demand decreased. When demand decreases, price ~~decreases~~, when demand increases, price increases





change in Quality Demand  
Change in Demand.

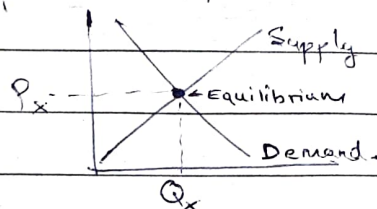


Demand increases, NOT because of price, because of other factors

Pro-douche

Market: Deal between Pro-douche-r / Supplier or customer!

$Q_d = 18 - 2P$  (Quantity demand)  
 $Q_s = -6 + 6P$  (Quantity supply)



Price?  
At Equilibrium,  
 $Q_d = Q_s$ .

$$18 - 2P = -6 + 6P$$

$$\text{Or, } 24 = 8P$$

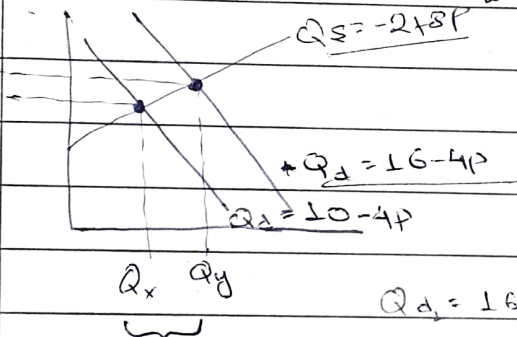
$$\therefore P = 3 \text{ (Price).}$$

Quantity = ?

$$\therefore Q_d = 18 - 2 \times 3 = 12.$$

$$Q_s = -6 + 6 \times 3 = 12.$$

P P P  
P P P  
P P P



$$Eq^b 1: 16 - 4P = -2 + 8P$$

$$\therefore P = 1.5$$

$$Eq^b 2: 10 - 4P = -2 + 8P$$

$$\therefore P = 1$$

$$Q_{d1} = 16 - 4 \times 1.5 =$$

$$= Q_y$$

$$Q_{d2} = 10 - 4 \times 1 =$$

$$= Q_x$$

$$\Delta Q = Q_y - Q_x =$$

Elasticity of Demand.

02/02/2023

$$Q_{dx} = f(P_x, M, P_y, \dots)$$

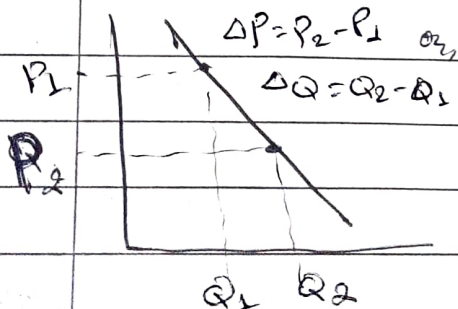
Price elasticity

Income elasticity

Gross elasticity

Price Elasticity: % change in quantity due to change in price.

$$= \left( \frac{\Delta Q_x}{Q_{x1}} \times 100 \right) \div \left( \frac{\Delta P_x}{P_{x1}} \times 100 \right) = E_p$$



$$\frac{\Delta Q_x}{Q_{x1}} \times \frac{P_{x1}}{\Delta P_x} = E_p$$

$$\therefore \frac{\Delta Q_x}{\Delta P_x} \times \frac{P_{x1}}{Q_{x1}} = E_p$$

# Price elasticity

$$P_{x1} = 10/-$$

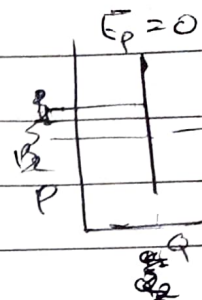
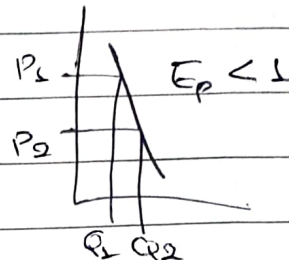
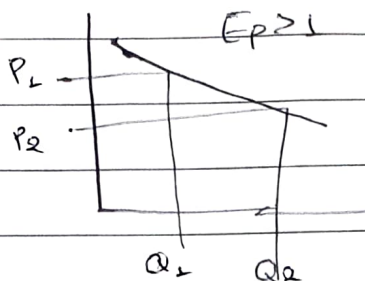
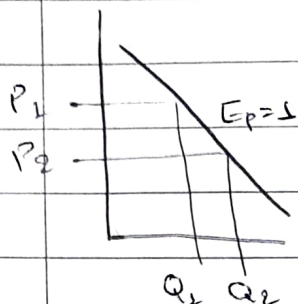
$$P_{x2} = 8/-$$

$$Q_{x1} = 4$$

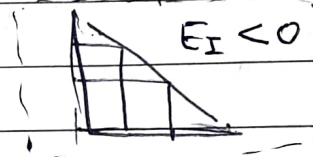
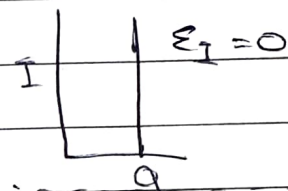
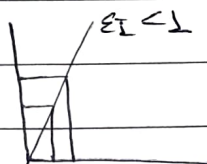
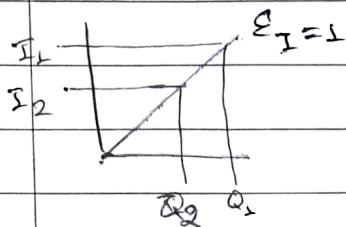
$$Q_{x2} = 6$$

$$\Delta Q_x = 2 \quad \Delta P_x = -2$$

$$E_p = \frac{2}{-2} \times \frac{10}{4}$$



## Income Elasticity



## Cross Elasticity

Flex

⊙↑ ——— ⊙↓

22/02/2023

## \* Production

Input → Output  
e.g. wood → furniture

Times of Production

Production Function:

Shortrun

Longrun

$$Q = f(L, K, N, \dots)$$

## Shortrun Production Functions

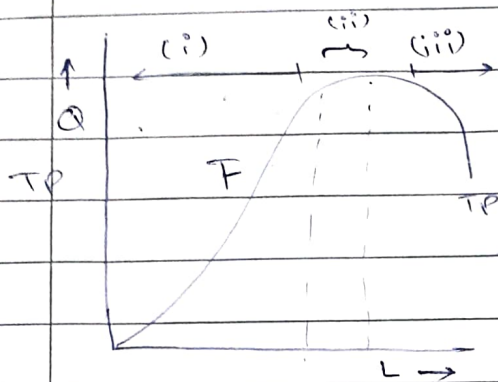
Units of Labour (L)	Total Product (TP) (Q)	Marginal Product (MP) $\frac{\Delta Q}{\Delta L}$	Average Product (AP) $\frac{Q}{L}$
1	80	80	80
2	170	90	85
3	270	100	90
4	368	98	92
5	430	62	86
6	470	50	78
7	504	24	72
8	504	0	63
9	495	-9	55
10	480	-15	48



17/02/19

# Short Run

- Law of Variable Proportion
- Law of Diminishing Returns



## Stage (I)

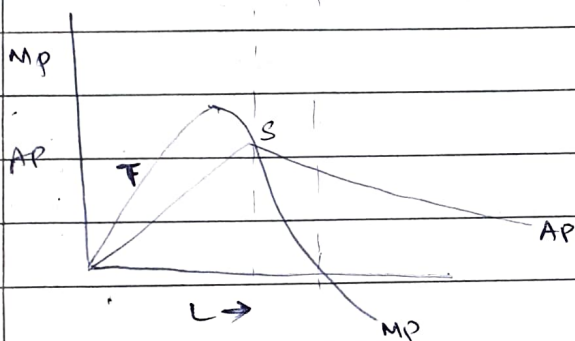
TP increases at increasing rate to 'F' point  
MP increases at 'F' maximum MP decreases (+)

AP increases (-) AP maximum when MP decreases

## Stage (II)

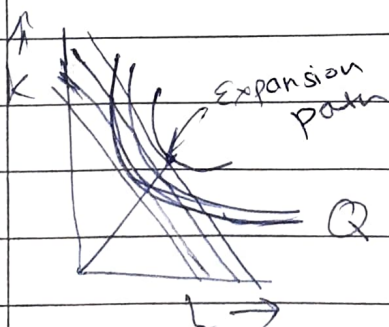
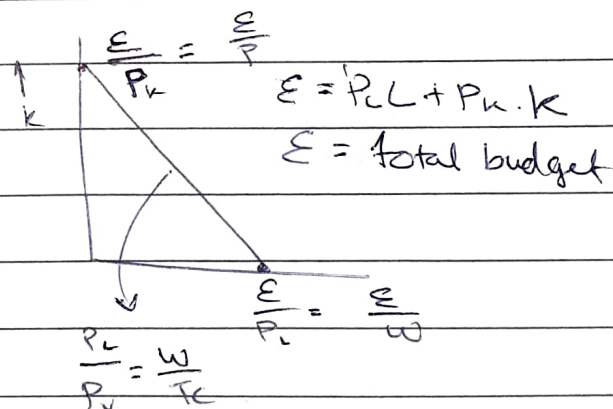
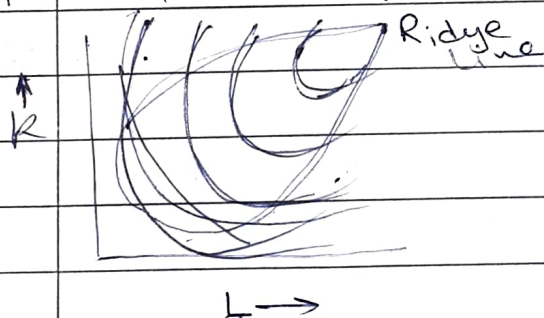
## Stage (III)

TP  $\rightarrow$  TP  $\downarrow$   
MP  $\rightarrow$  MP  $\downarrow$   
AP  $\rightarrow$  AP  $\downarrow$  (+)



23/02/2023.

# \* Isoquantimat ?



Production Chapters completed!

Assignment  $\rightarrow$  Difference between iso-