DEMAND ELASTICITY:

ELASTICITY:

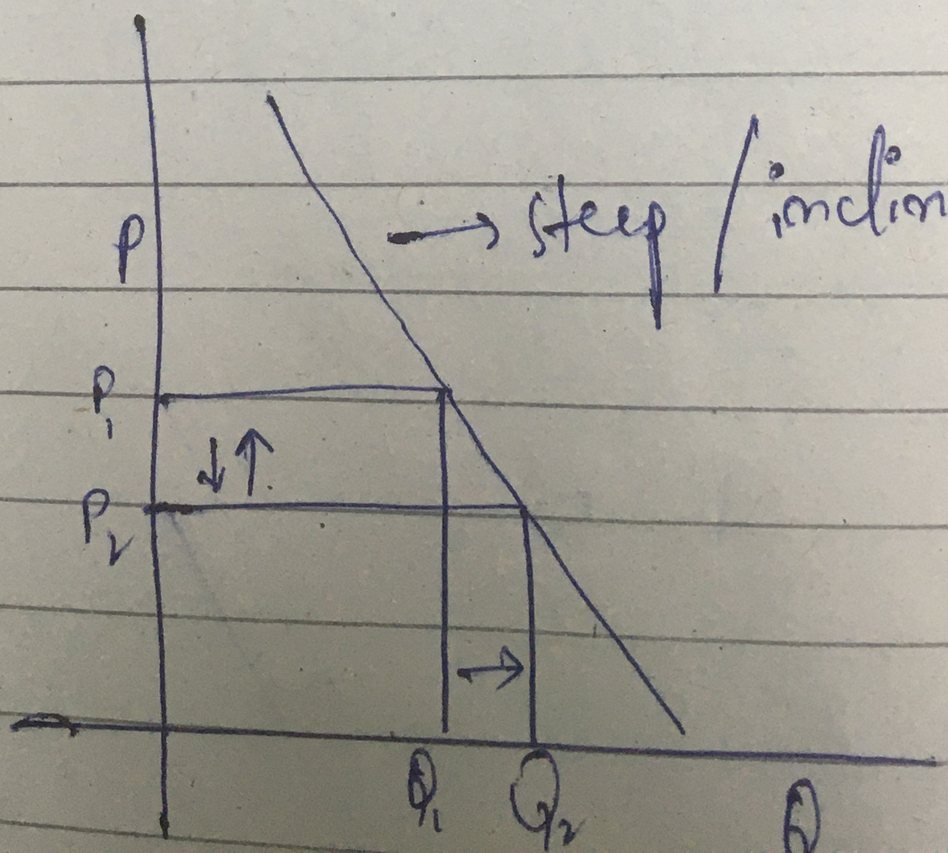
Elasticity of demand = $\frac{\text{percentage change}}{\text{percentage change}}$

$$\varepsilon_d = \frac{\% \Delta Q_D}{\% \Delta P}$$

1) Inelastic demand
2) Elastic demand
3) Unit elastic demand
4) Perfect elasticities

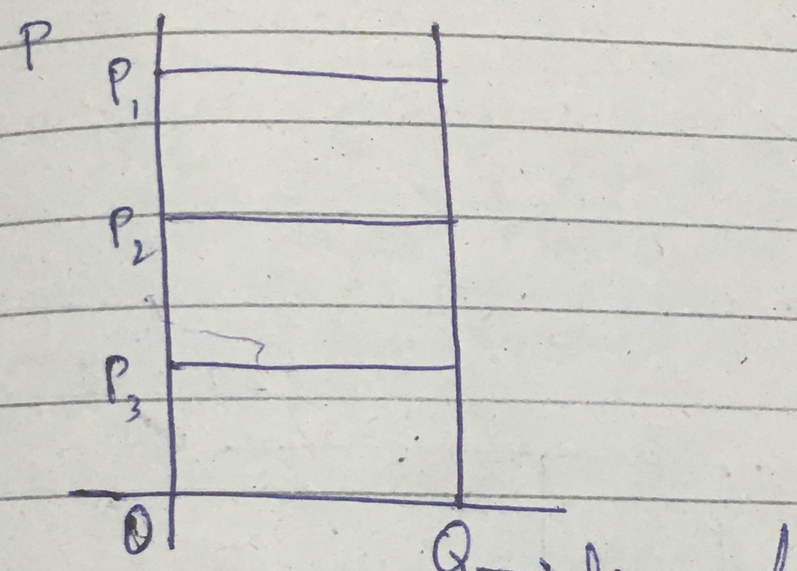
INELASTIC DEMAND:

$$\% \Delta p > \% \Delta Q_D$$



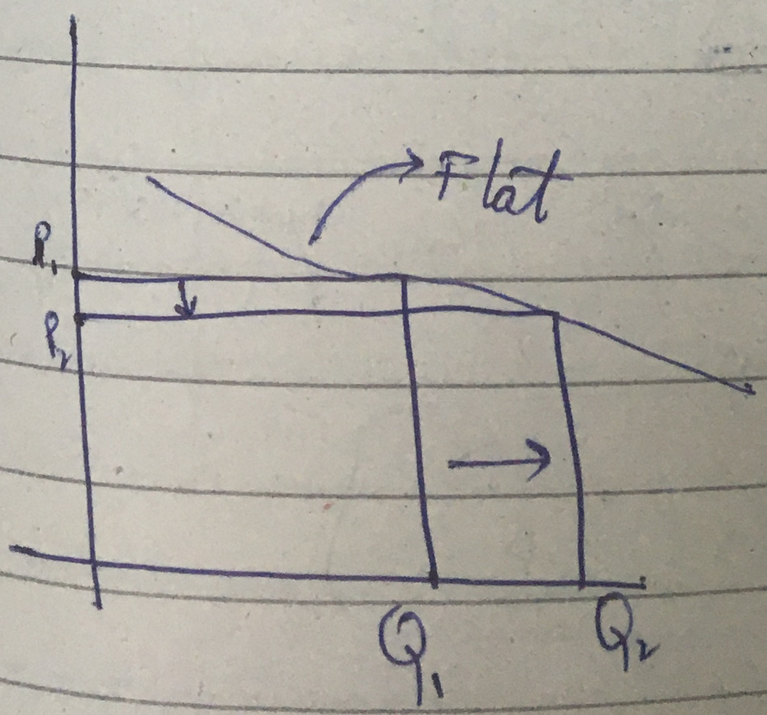
2) Necessities
- Healthcare
- visits to hospital
- medicines
- clinics &
- PUBLIC / PRIVATE Clinics and hospit

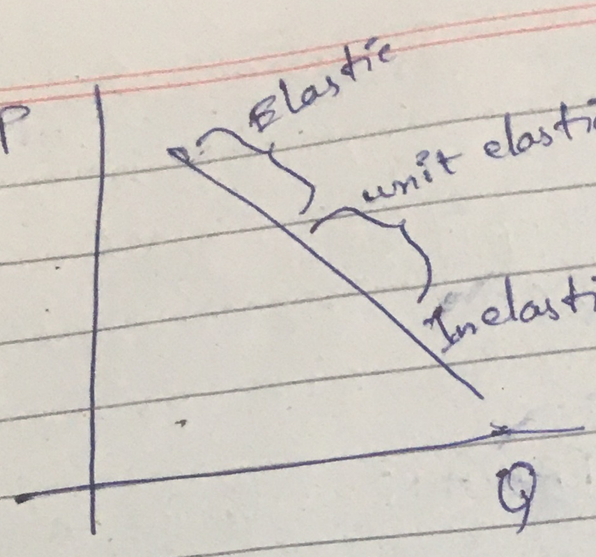
PERFECTLY INELASTIC DEMAND.



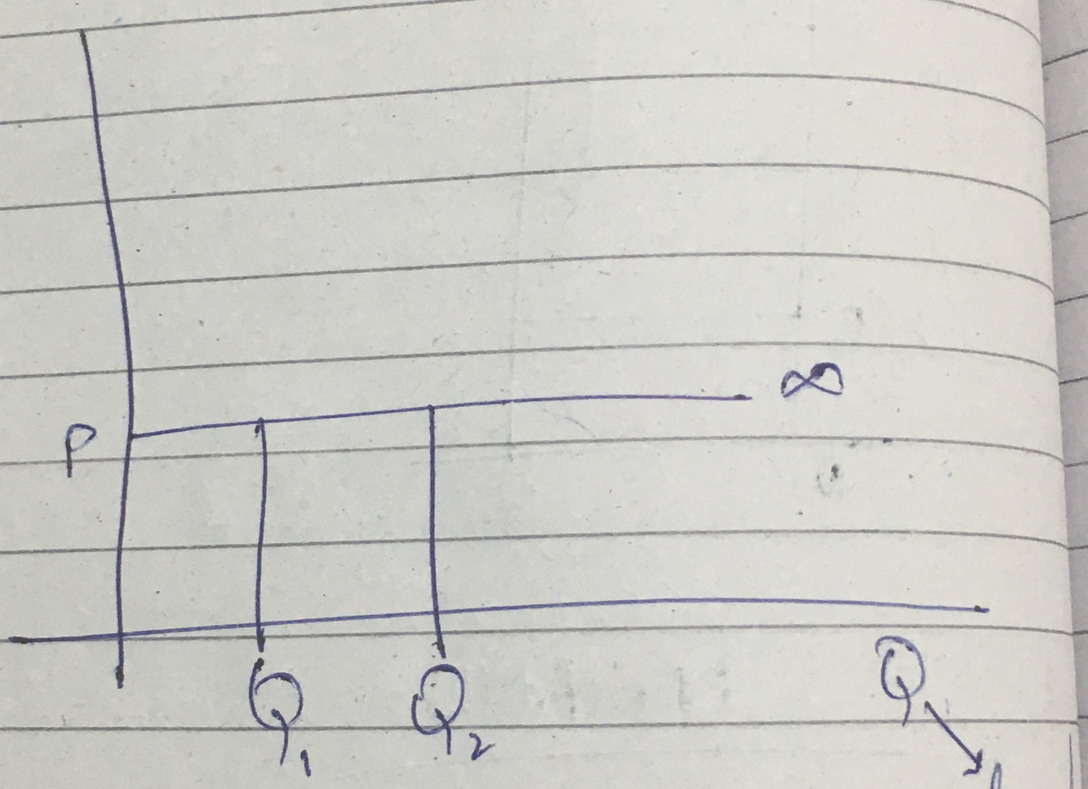
ELASTIC DEMAND:

$\% \Delta P < \% \Delta Q_D$





PERFECTLY ELASTIC DEMAND :



UNIT ELASTIC DEMAND

When price change & quantity d
are equal.

$$\% \Delta p = \% \Delta Q_D$$

TYPES

1) Arc
2) Incom
3) Cross
4) Advert
5) Point

A

T

in

quant

p

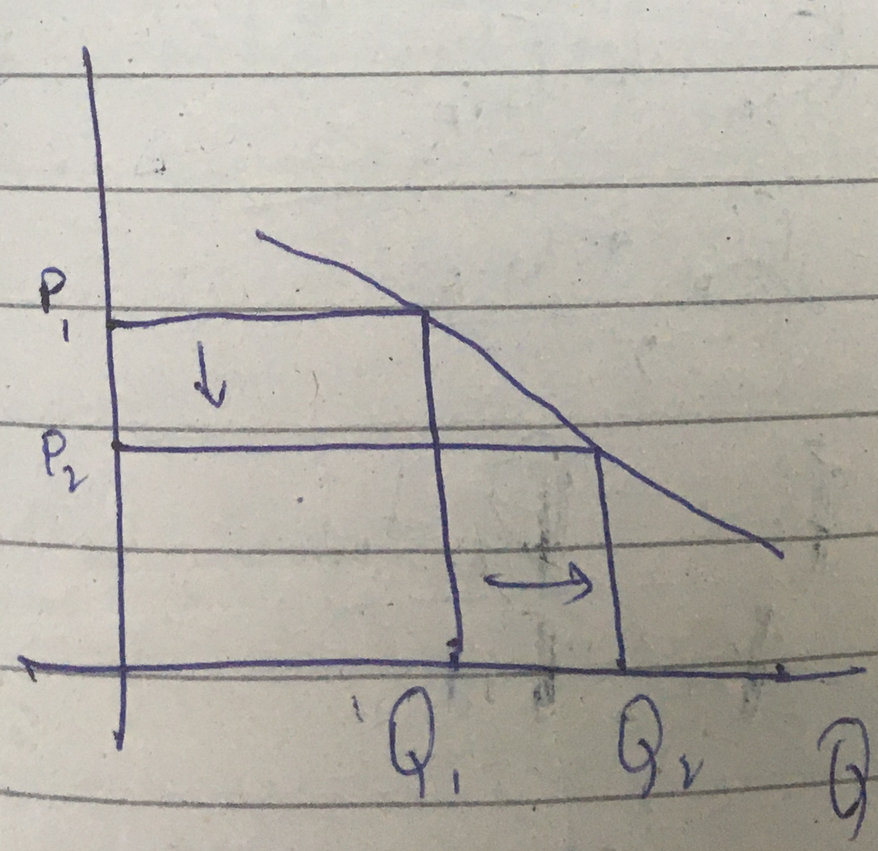
TYPES OF DEMAND ELASTICITY:

1) Arc elasticity
2) Income elasticity
3) Cross elasticity
4) Advertising elasticity
5) Point elasticity

Arc elasticity:

The type of demand elasticity which is measured in a fixed interval of price & quantity demanded.

$$\varepsilon_{arc} = \frac{\frac{Q_2 - Q_1}{(Q_2 + Q_1)/2}}{\frac{P_2 - P_1}{\left(\frac{P_2 + P_1}{2}\right)}}$$



INCOME ELASTICITY:

Elasticity calculated in a fixed interval of income & q demanded.

Y = income

$$\varepsilon_y = \frac{\frac{Q_2 - Q_1}{\frac{Q_2 + Q_2}{2}}}{\frac{Y_2 - Y_1}{\frac{Y_2 + Y_1}{2}}}$$

CROSS ELASTICITY:

Substitutes & complements

$$\varepsilon_{cross} = \frac{\frac{Q_{2A} - Q_{1A}}{\frac{Q_{2A} + Q_{1A}}{2}}}{\frac{P_{2B} - P_{1B}}{\frac{P_{2B} + P_{1B}}{2}}}$$

+ve Result → to substitute

-ve Result →

ADVERTISING ELASTICITY:

$$\varepsilon_{adv.} = \frac{\% \Delta Q_D}{\% \Delta \text{Advertising expensing}}$$

POINT ELASTICITY:

To measure elasticity at one point of the demand curve.

$$\varepsilon_{pi} = \frac{\Delta Q}{\Delta p} \times \frac{P_1}{Q_1}$$

let $Q = 20 - 3p$ → slope → we calculate by differentiating

$\varepsilon_{pi} = (-3) \times \frac{3}{11}$ ← slope

$= \frac{-9}{11}$

$P_1 = 3$

$Q = 20 - 3(3)$

$Q = 11$

$= -0.818$

$\varepsilon_D = 1$
unit elastic

$\varepsilon_D < 1$
Inelastic

$\varepsilon_D > 1$
Elastic

$$-0.023 = \frac{Y_2 - 3000}{Q_2 - 3000}$$

Qn- Marginal Revenue of 1st price
k lye same TR, 2nd k liye
$TR_2 - TR_1$

Utility Analysis:

1) Cardinal utility & budget line approach
2) Ordinal utility & indifference curve approach.

1) Cardinal - Numbers & objectivity
Ordinal - Subjectivity of utility.

Budget Line (Price line)

Budget line is a linear curve of a fixed income indicating objective the combinations of two goods which an individual consumer with fix

income.

EQUATION:

$$M = P_a \cdot A + P_b \cdot B$$

A = Good A
B = Good B

M = Income (Money)

P_a = Per unit price of A

A = Unit of A

P_b = Per unit price of B

B = Unit of B

Budget Line:

$M = \$12$

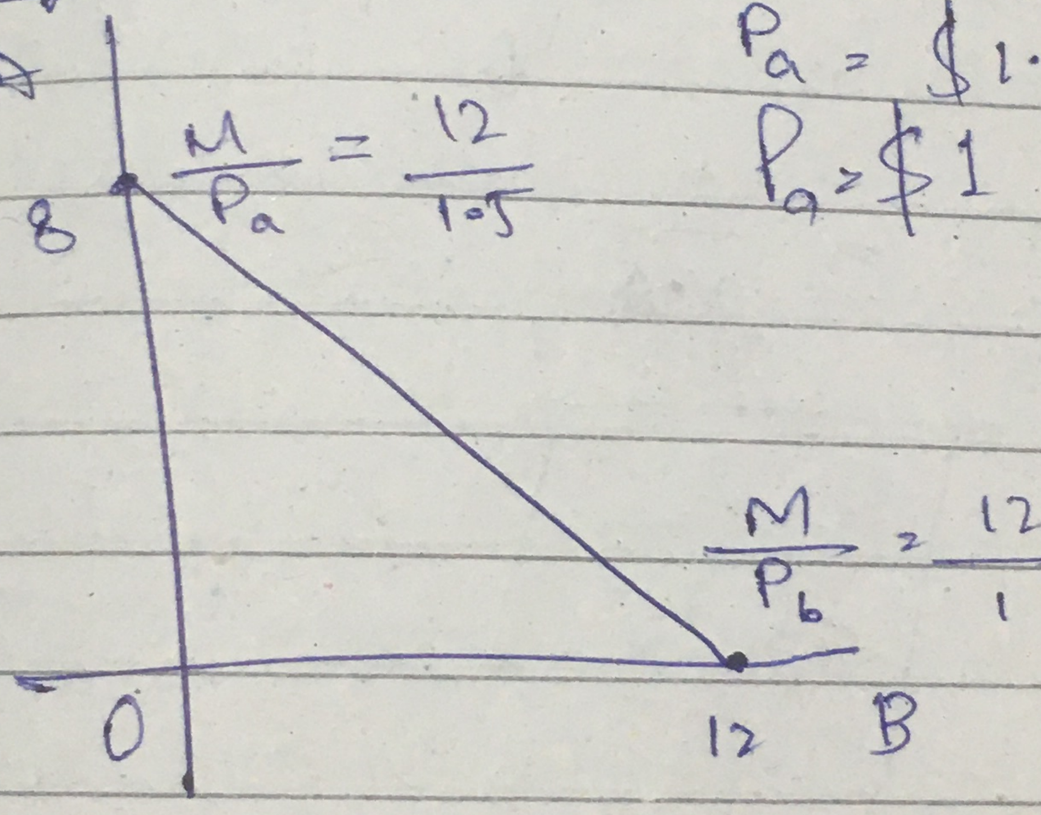
$P_a = \$1.5$

$P_a = \$1$

~~$M = \$$~~

$P_a = \$1$

$P_b = \$1$



combinations?

$$\frac{M}{P_a} = \frac{\text{Income}}{\text{Price of A}}$$

$$= \frac{\$12}{\$1.5}$$

$$= 8$$

MAXIMUM CONSUMPTION OF A WITH ZERO OF B

$(A, B) = (8, 0)$

$$\frac{M}{P_b} = \frac{12}{1}$$

$$= 12$$

$$(A, B) = (0, 12)$$

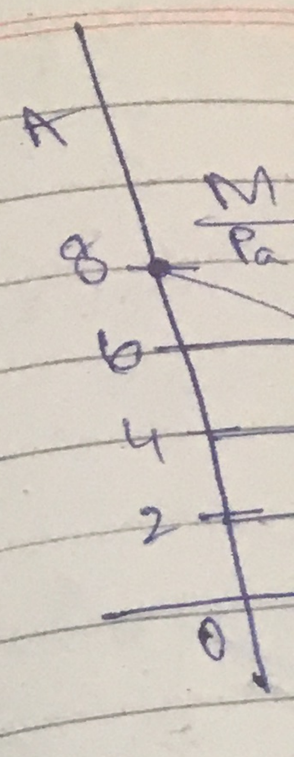
SLOPE OF BUDGET LINE

$$= \frac{\text{Price of B}}{\text{Price of A}}$$

$$= \frac{P_b}{P_A}$$

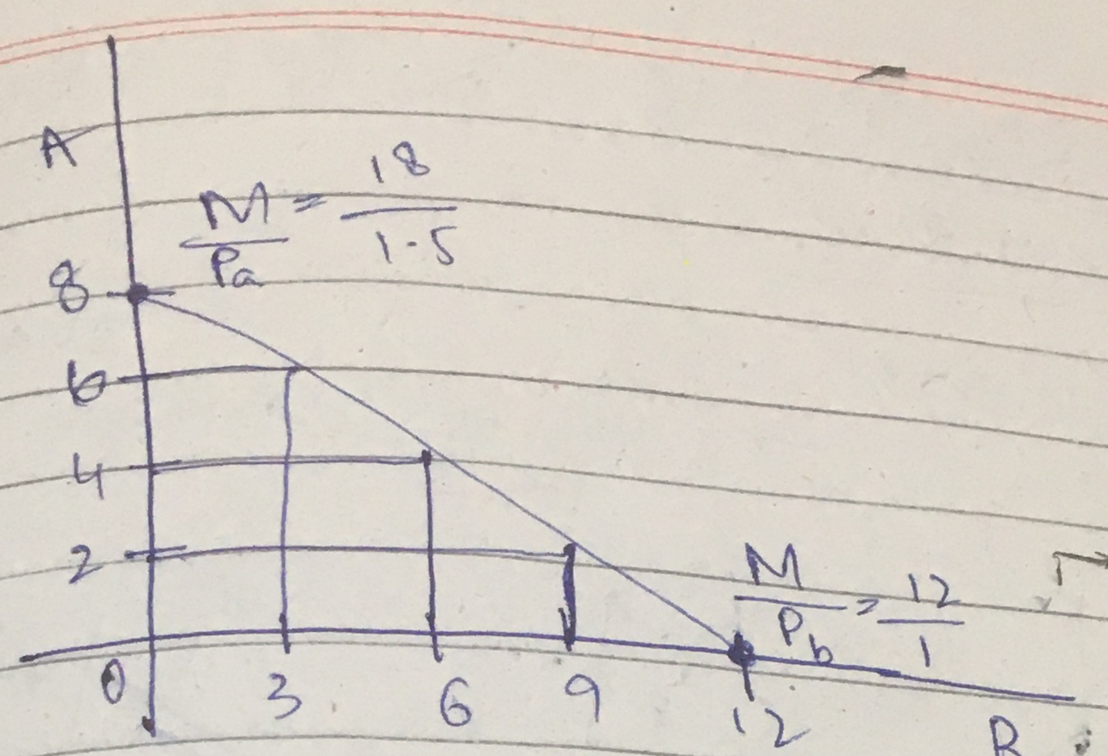
$$\frac{P_b}{P_A} = \frac{1}{1.5}$$

$$= \frac{2}{3}$$



Sol:

	A	B	$M = P_a \cdot A + P_b \cdot B$
1)	8	0	$\$12 = 1.5(8) + (1)(0)$
2)	6	3	$\$12 = 1.5(6) + 3(1)$
3)	4	6	$\$12 = (1.5)(4) + 6(1)$
4)	2	9	$\$12 = (1.5)(2) + 9(1)$
5)	0	12	$\$12 = (1.5)(0) + 12$

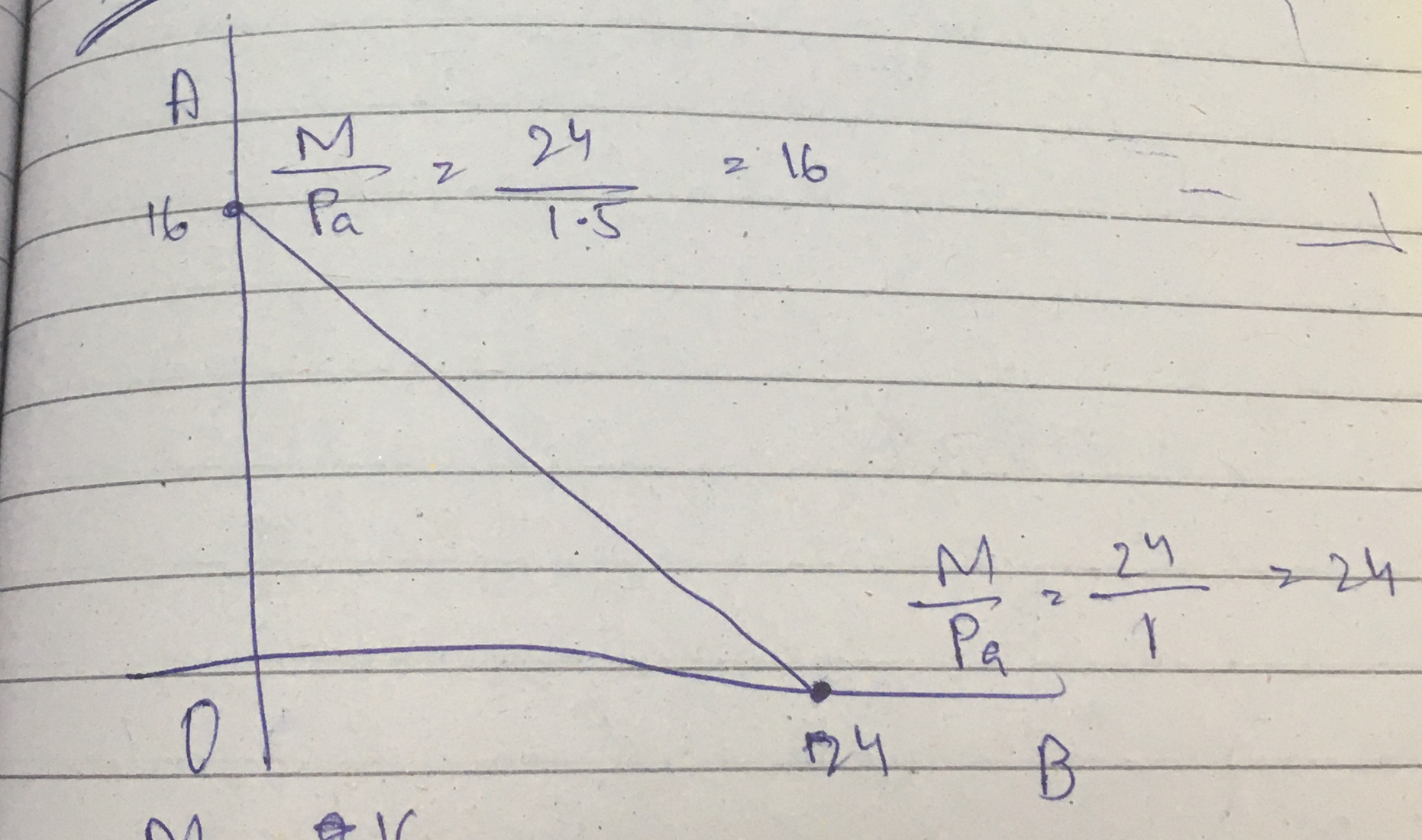


$M = \$24$

$P_a = \$1.5$

$P_b = \$1$

Sol: Combinations ?



$\frac{M}{P_a} = \$16$

MAX. CONSUMPTION OF A WITH ZERO OF B

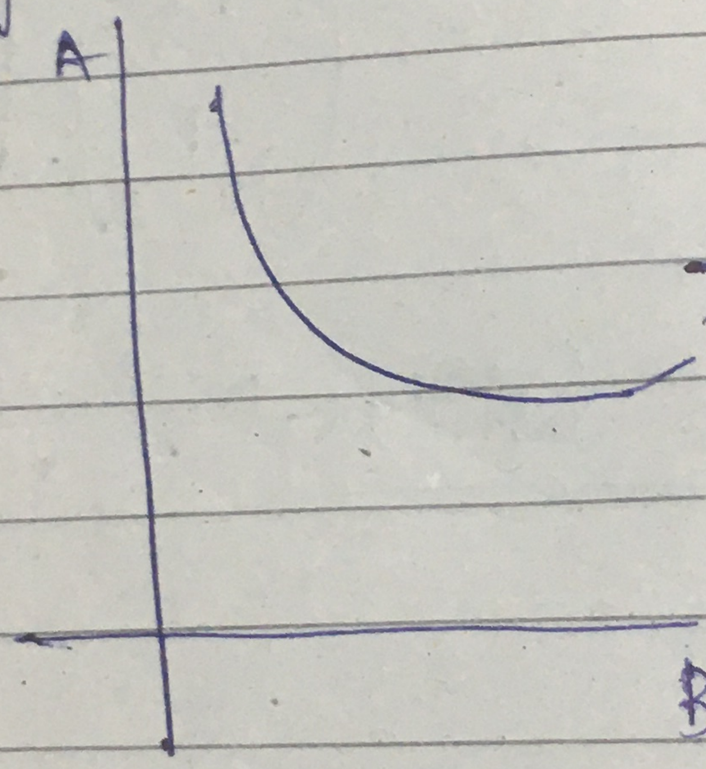
--- to be continue

ORDINAL UTILITY AND INDIFFERENCE CURVE APPROACH

Ordinal = subjectivity of utility

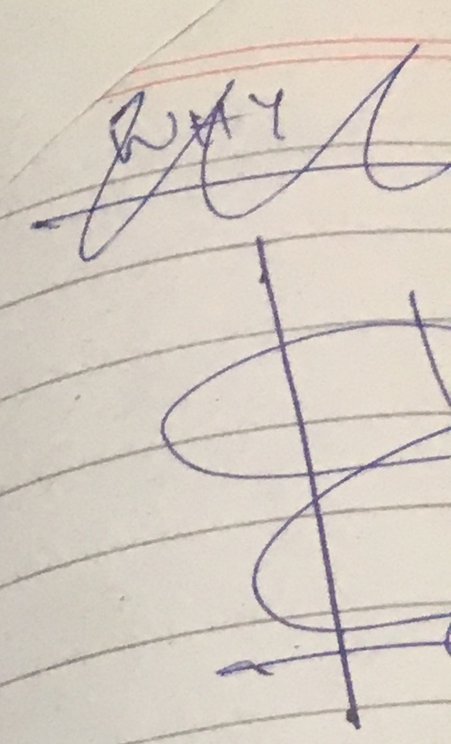
INDIFFERENCE CURVE :

It is the locus of points indicating various combinations of two goods with a fixed level of total utility.

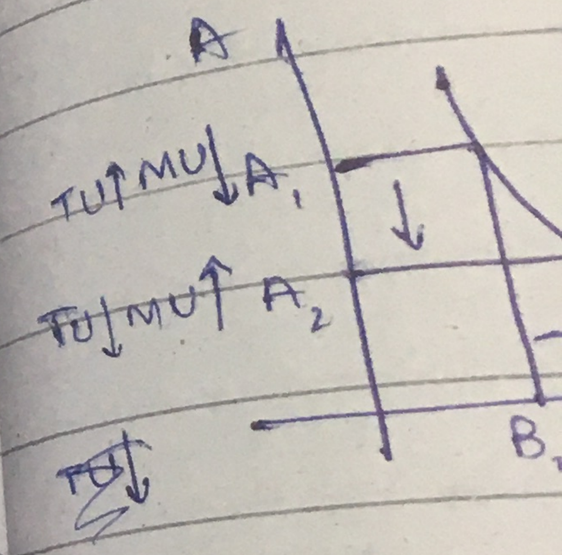


PROPERTIES :

1) The indifference curves are convex to origin.
2) Indifference map in one quadrant with different levels of total utility.
3) Consumer's equilibrium on the indifference curve.



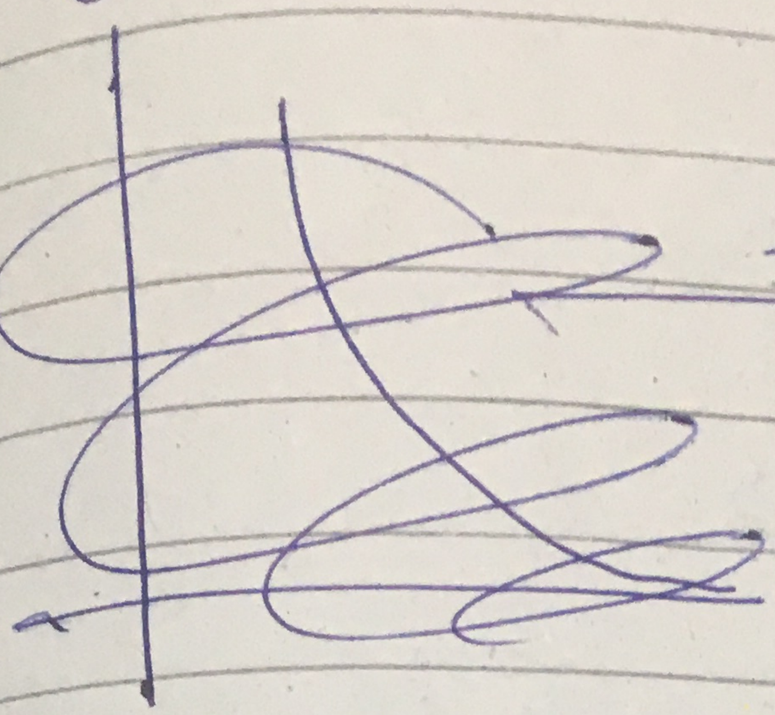
WH

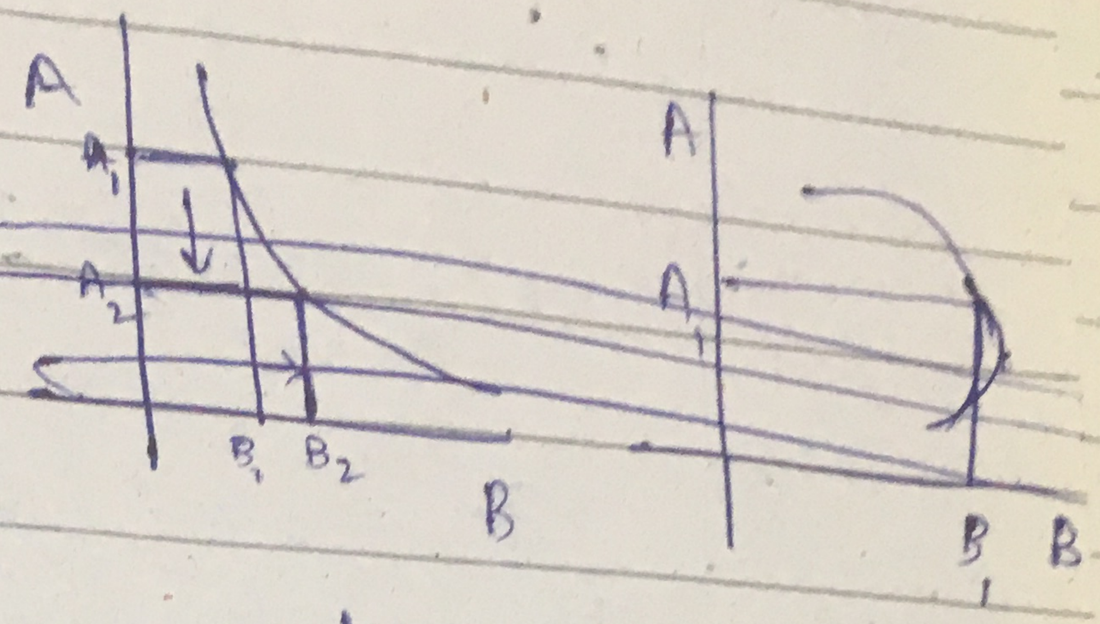


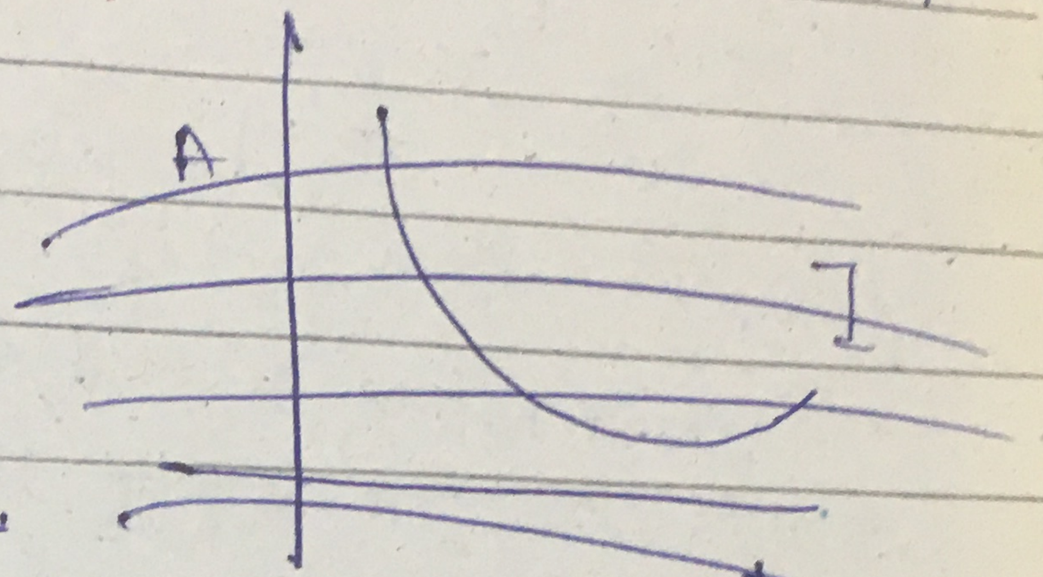
APPLICATION

OF DIMINI

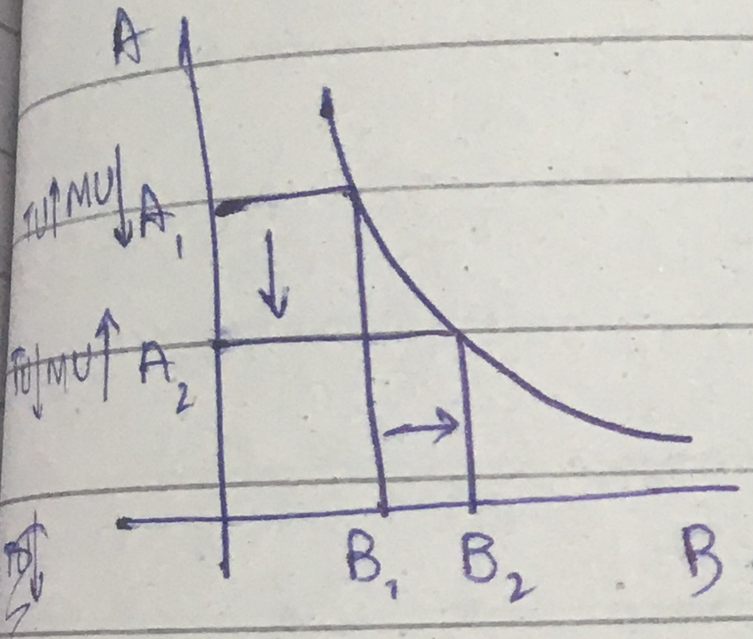
MARGINA

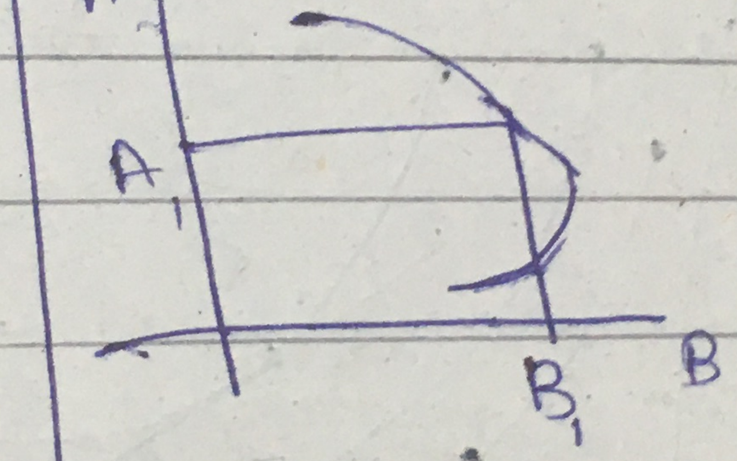


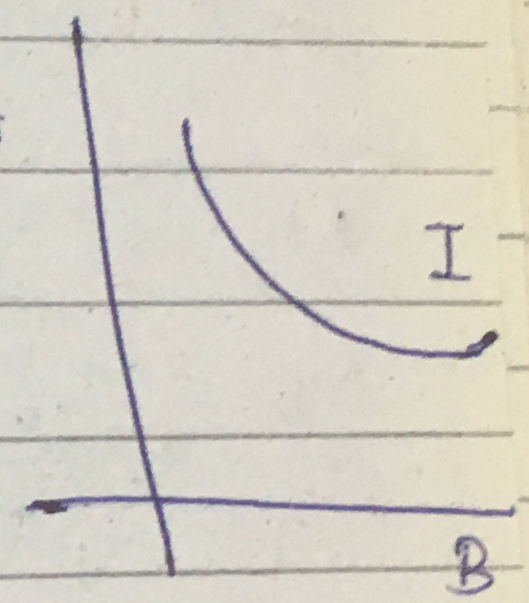




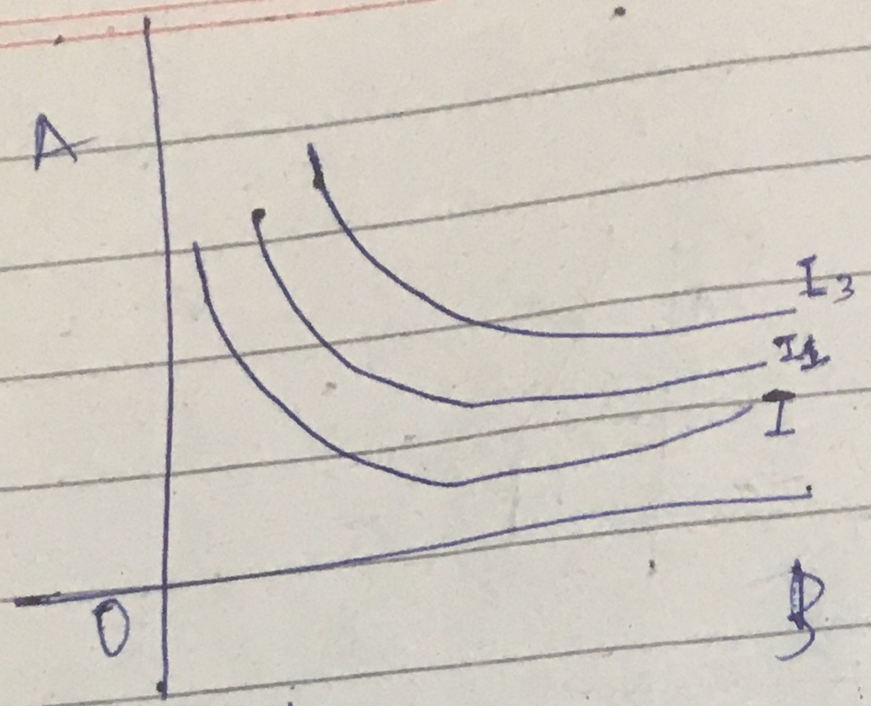
WHY CONVEX:







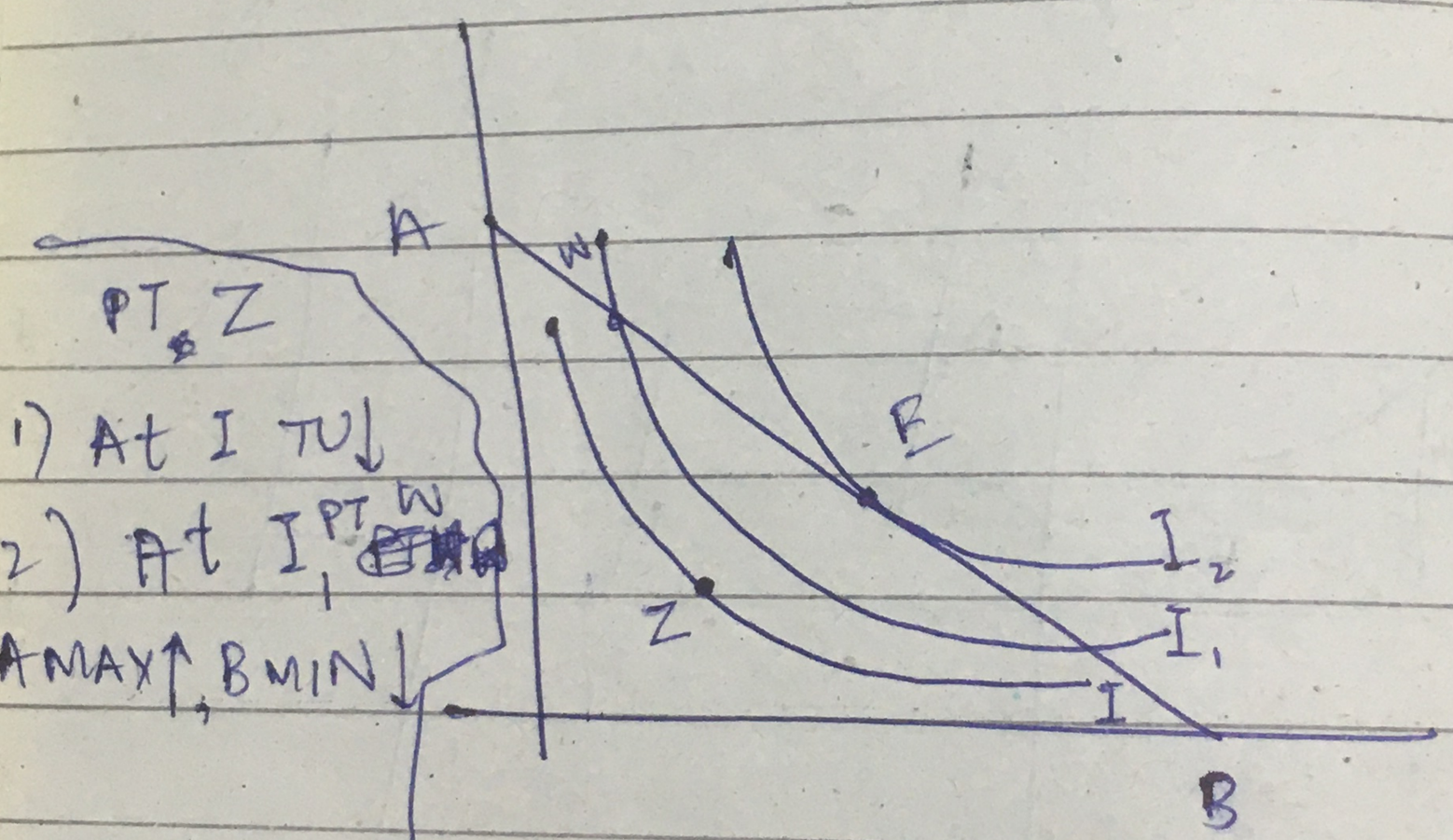
APPLICATION OF LAW OF DIMINISHING MARGINAL UTILITY



$TU < TU_1 < TU_2$

$I < I_1 < I_2$ TU at I < TU at I_1

CONSUMER'S EQUILIBRIUM:

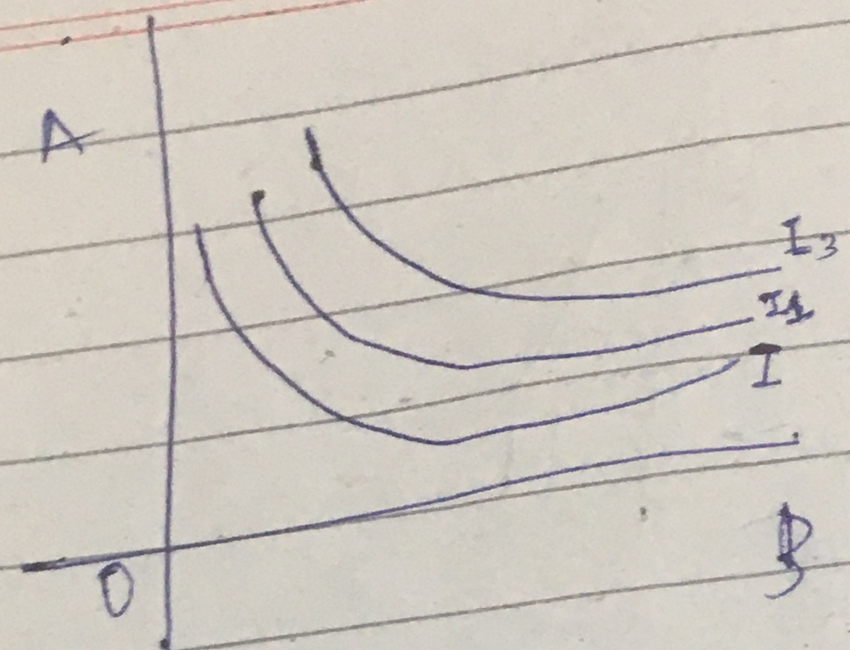


At I_2, PT E

Slope of budget line = (MRS) at the indifference curve

marginal rate of substitution

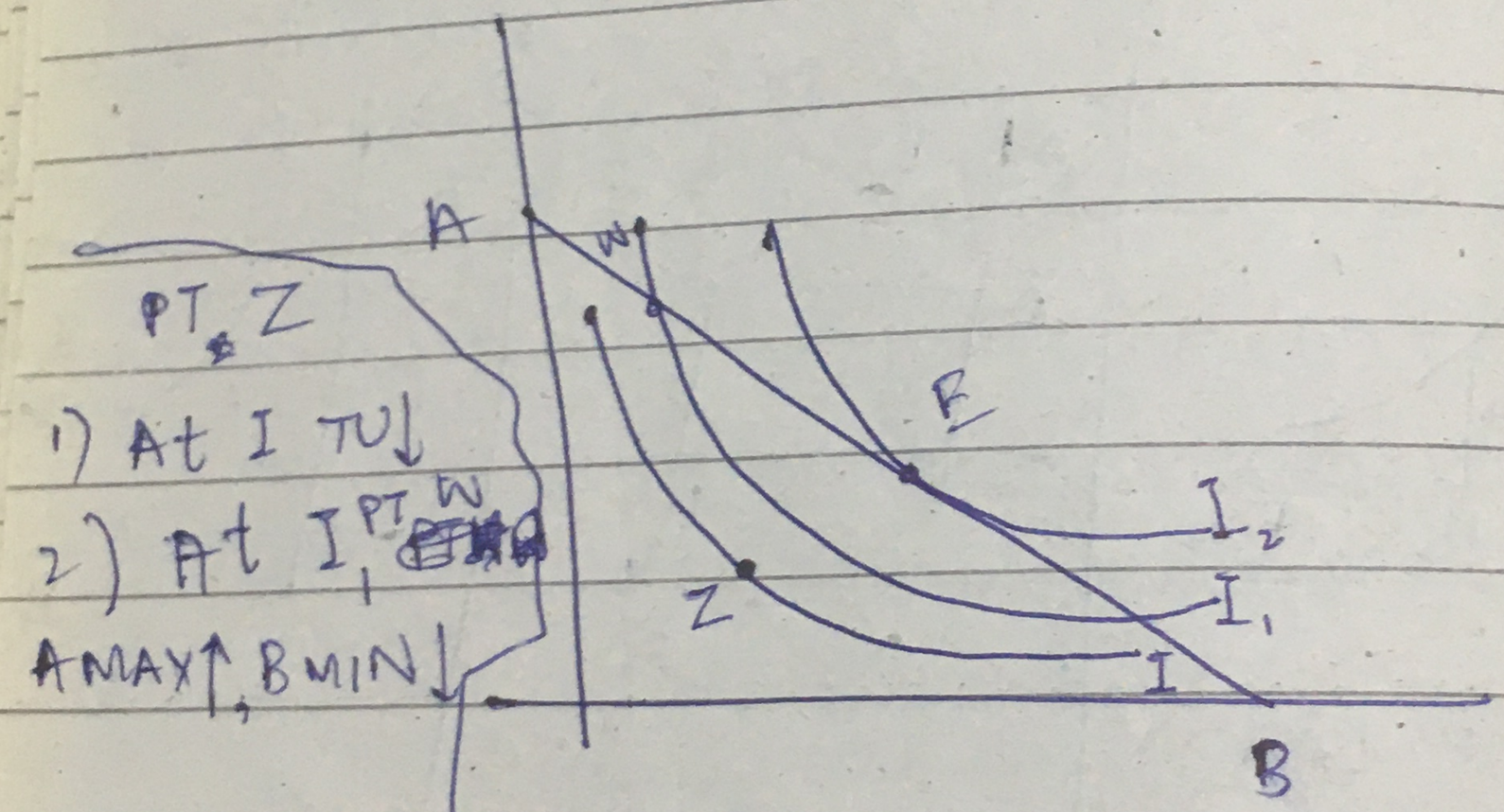
3) $\frac{P_\beta}{P_\alpha} = MRS$



$TU < TU_1 < TU_2$

$I < I_1 < I_2$ TU at I < TU at I_1

CONSUMER'S EQUILIBRIUM:



1) At I TU↓

2) At I_1 PT W

AMAX↑, BMIN↓

At I_2, PT E

Slope of budget line = (MRS) at the indifference cu

marginal rate of substitution

3) $\frac{P_B}{P} = MRS$

ACCOUNTING PROFIT = TOTAL REVENUE - EXPLICIT COST

OR

TR - DIRECT EXPENSES

ECONOMIC PROFIT = TOTAL REVENUE - (EXPLICIT + IMPLICIT COST)

E.P < A.P

NORMAL PROFIT: (Break even point)

Total Revenue = Total Cost

REVENUE EARNED = COST INCURRED.

COST OF STAYING IN THE BUSINESS OR OPPORTUNITY COST OF THE ENTREPRENUER.

RESOURCES:

- Fixed Resources (equipment / building)
- Variable Resources (Labour)

SHORTRUN AND LONGRUN PRODUCTION

In Shortrun period resources are fixed and partially variable.

In Longrun period all resources become variable.

- Expansion takes place.

Law of diminishing returns:

- Assumptions
  (1) Shortrun (period)
  (2) Technology is fixed and labour is variable.
  (3) Farming plot is also fixed.

Statements:

"In order to increase total product units of variable resource are added to the fixed resource, the total product increases to a certain point but the marginal product declines".

Total product = total quantity produced or total output

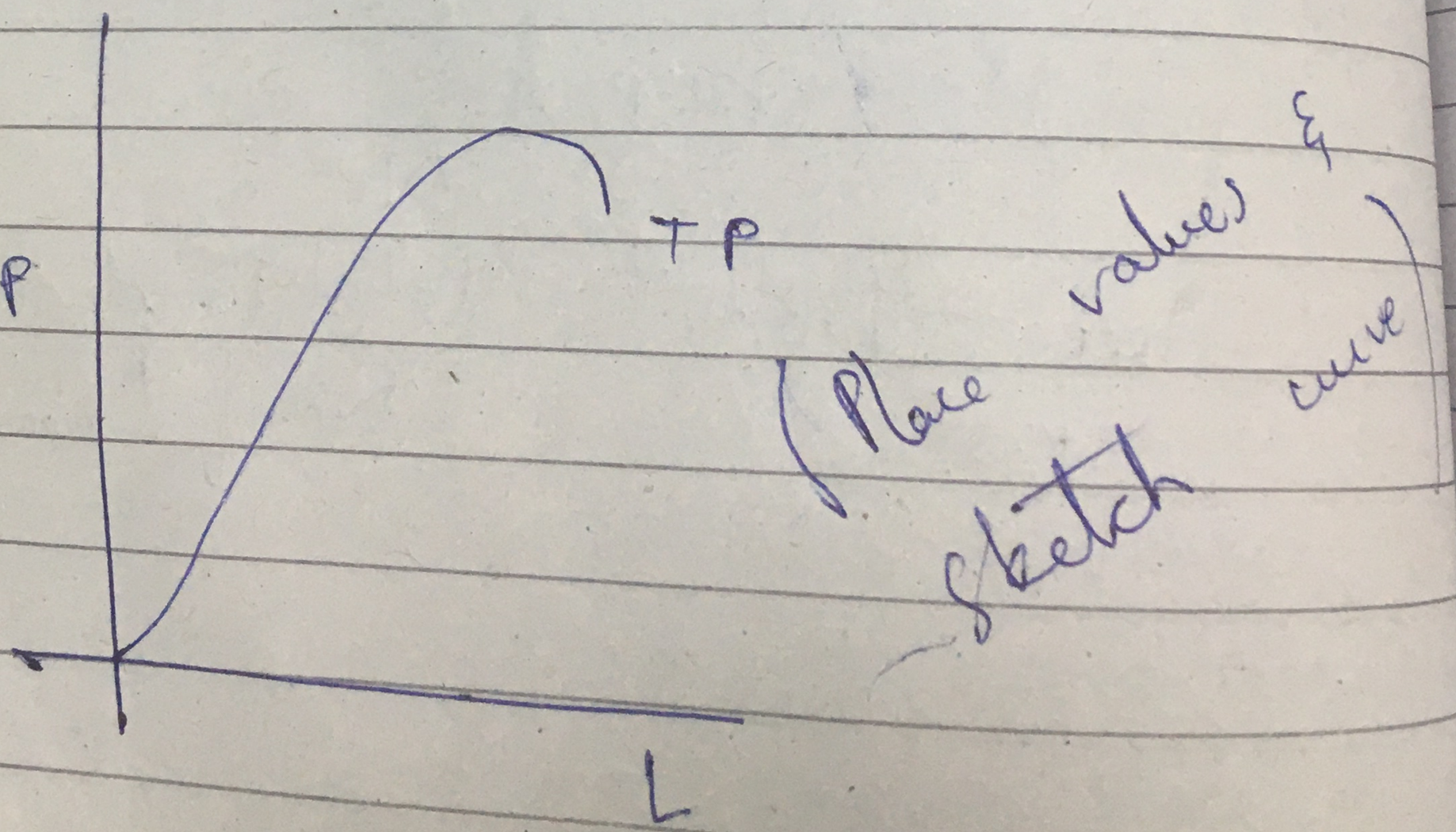
Marginal product = $\frac{\Delta TP \rightarrow \text{total product}}{\Delta L \rightarrow \text{Labour}}$

$$M.P = \frac{\Delta TP}{\Delta L}$$

$$\text{Average Product} = \frac{\text{Total Product}}{\text{No. of Labour}}$$

Variable Resource (Labour)	Total Product (TP)	Marginal Product (MP)	Average Product (AP)
0	0	0	0
1	10	10	10/1
2	25	15	25/2 = 12.5
3	45	20	45/3 = 15
4	60	15	60/4 = 15
5	70	10	70/5 = 14
6	75	5	75/6 = 12.5
7	75	0	75/7 = 10.7
8	70	-5	70/8 = 8.75

PANEL A



(Plot values & sketch curve)

70
64
60
56
40
40

MP, AP

values

(Place sketch curve)

AP

L

MP

COSTS OF PRODUCTION

1) $TC = TFC + TVC$	TC = Total cost
2) $AFC = \frac{TFC}{Q}$	TVC = Total Variable cost
3) $AVC = \frac{TVC}{Q}$	TFC = total fixed cost
4) $ATC = \frac{TC}{Q}$	MC = Marginal cost
5) $MC = \frac{\Delta TC}{\Delta Q}$	

TFC :

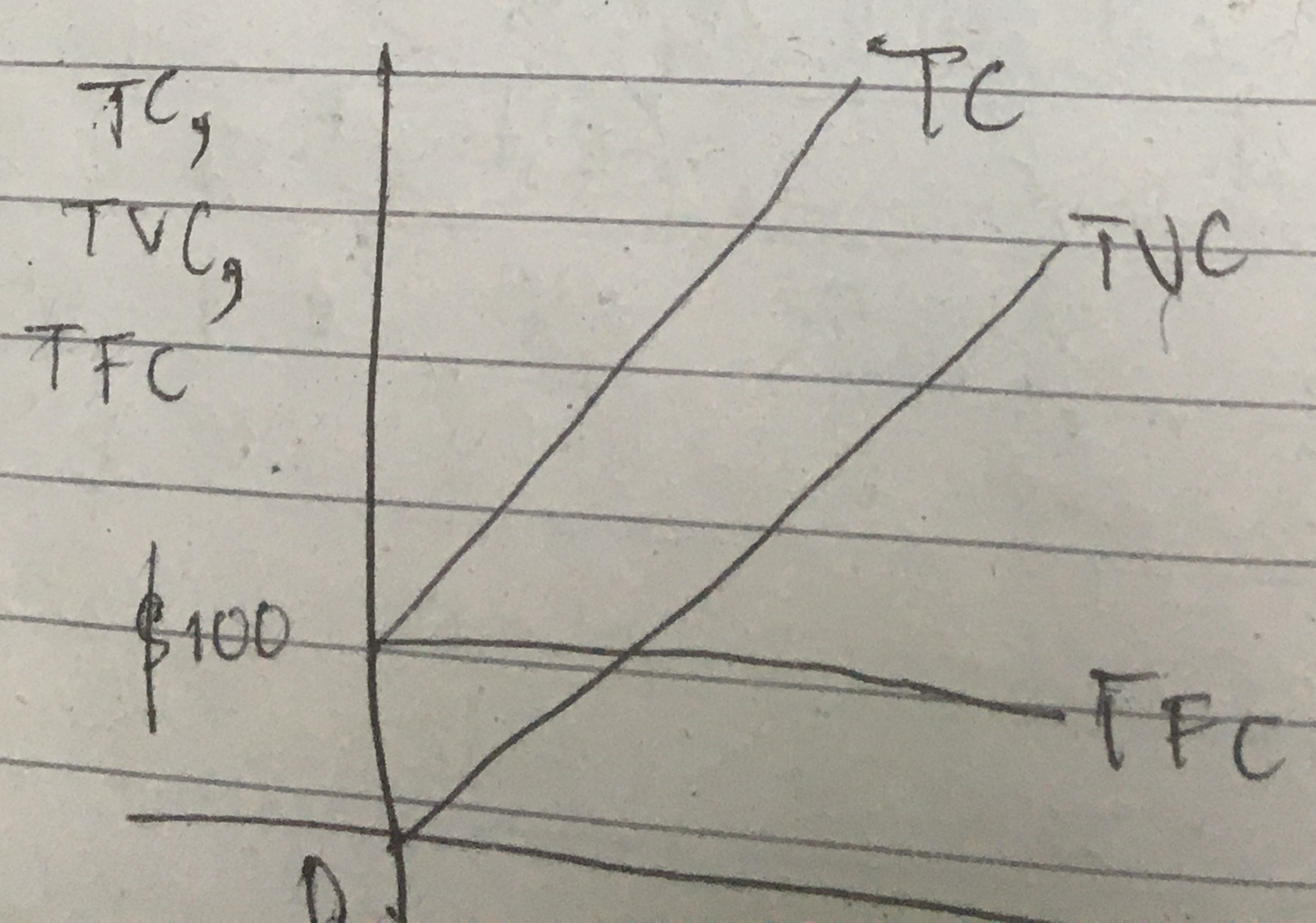
Total fixed cost refers to cost of equipment & infrastructure which doesn't change as long as the firm is in a short run period

VC :

Variable cost linked with the variable resources as the cost of variable resources increases, the variable cost also increases.

TP(Q)	TFC	TVC	TC	AFC	AVC	ATC
0	$100	0	100	–	–	
1	$100	90	190	100	90	
2	''	170	270	50	85	
3	''	240	340	33.33	80	
4	''	300	400	25	75	
5	''	370	470	20	74	
6	''	450	550	16.67	75	
7	''	540	640	14.29	77.14	
8	''	650	750	12.5	81.25	
9	''	780	880	11.11	86.67	
10	''	930	1030	10	93	

PANEL -A



EXPLICIT COSTS ::
Semester fees, event fees, admission fees,

pays annual rent of $2000 per year and spend $2500 on material. His investment is of 40000 which could earn him $5500. He has hired a job of $19000, his abilities are worth, $2500. Annual revenue earned is $75000. Calculate accounting profit & economic profit.

6) what factor can shift the LR curves?

Q: why average variable cost curve u-shaped?

(1) Intial portion of ave it is a steep curve.

$\Delta C > \Delta Q$

(2) As you move on the flatter portion

$\Delta C < \Delta Q$

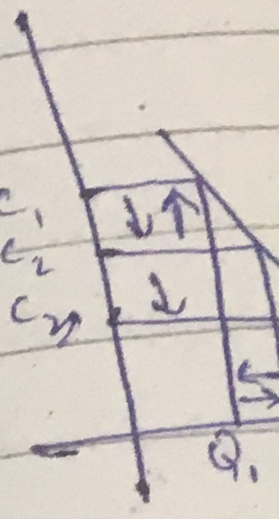
(3) Upper portion is inelastic & portion is flatter. (Elastic)

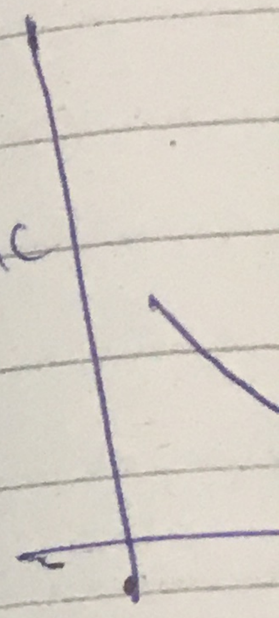
(4) Law of diminishing returns
- Fixed resources
- Variable

Numericals
Elasticity
Qu -

(5) Manage
Place
Pe

(6)





Numericals
Elasticity ~~Eda~~ Q11 - Q18

~~Substitution ke~~
~~ka~~

(5) Managerial specialization takes place.

(6) ~~Perfect~~ unit cost declines.