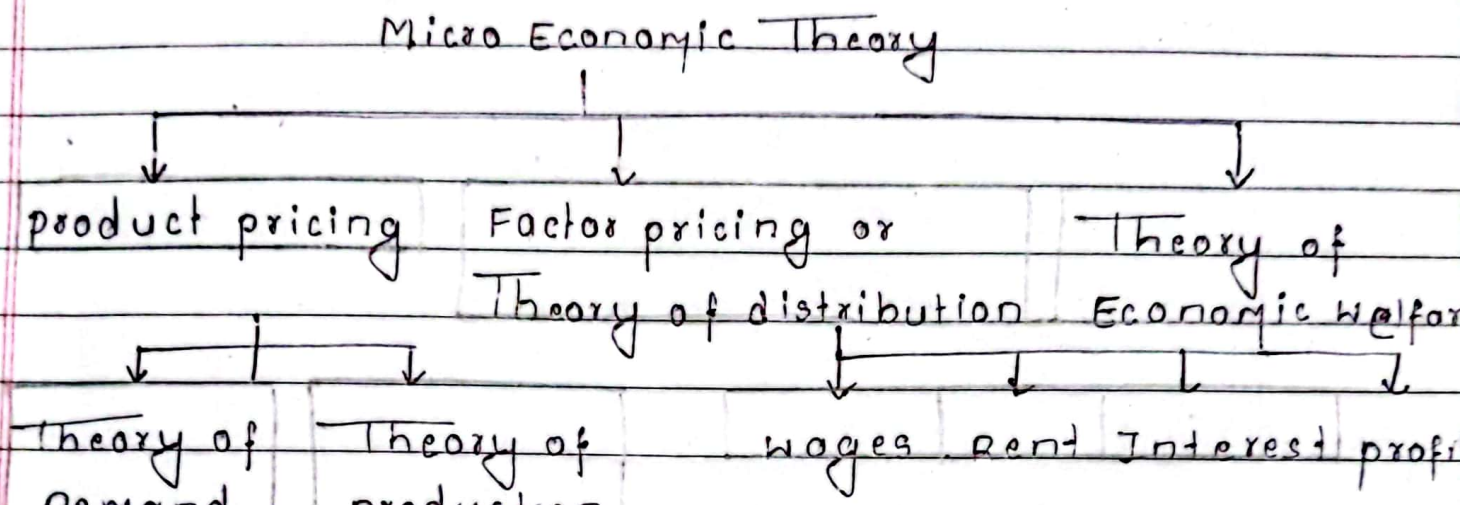
Scope of Microeconomics



Macroeconomics

JB Say : "Supply creates its own demand" → 1929

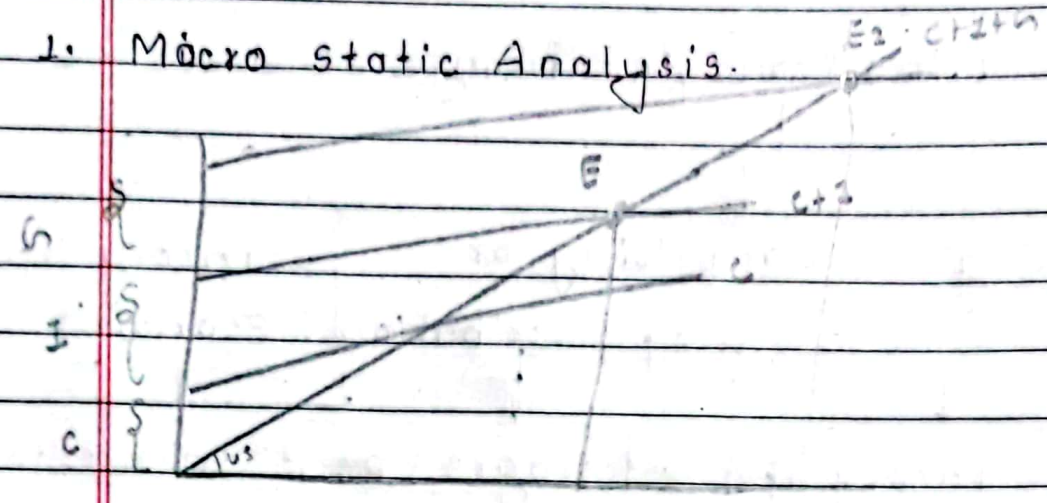
Macroeconomics → Also "keynesian Economics"
→ Aggregate study of variable
→ Theory of Income and employment
→ Method of Lumping

Features

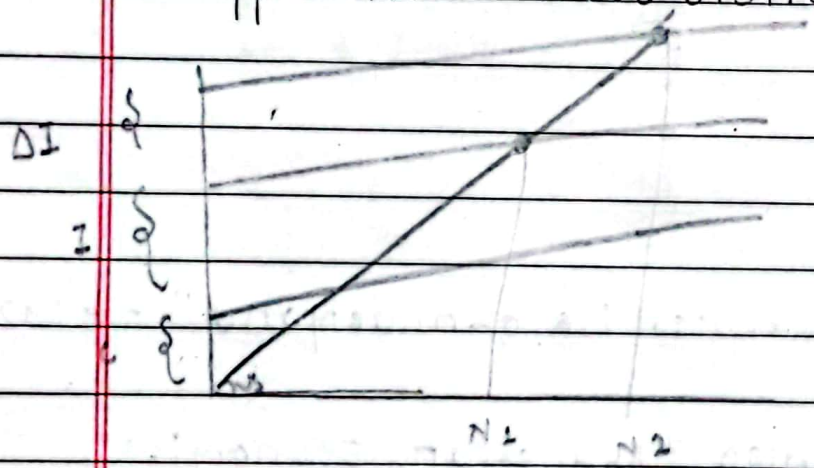
1. Analyze the behaviour of the economy as a whole
2. Constant relative price and given resources allocat
3. Policy science and more normative.
based on value judgement

Type of analysis in macroeconomics

1. Macro static Analysis.

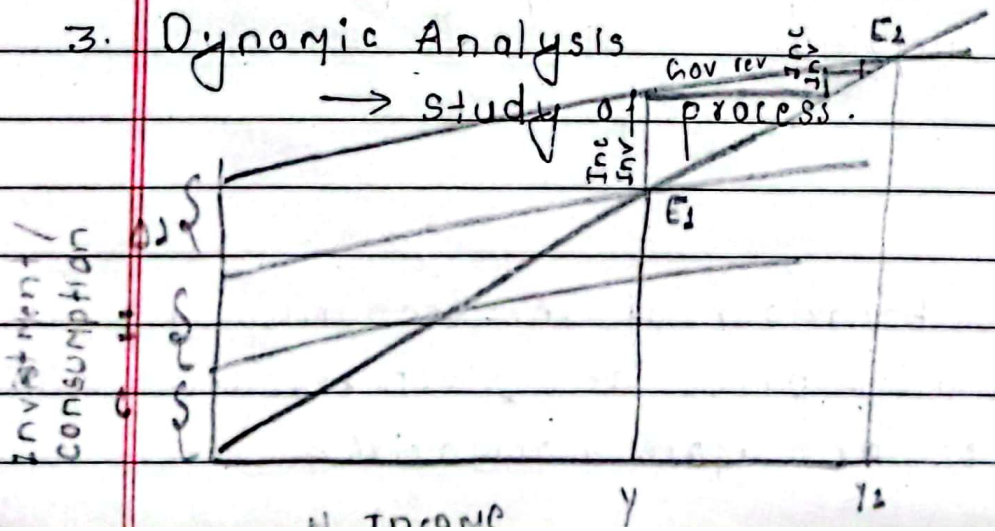


2. Comparative Macro static



Compare N1 and N2

3. Dynamic Analysis
→ study of process.



Difference between Microeconomics and macroeconomics

Base	Microeconomics	macroeconomics
1. Nature	Individual Type	Economic analysis as a whole
2. Example	Individual saving Individual Consumption Output	National Income, Inflation, Employment level
3. Problems	Price determination. Output determination	Business cycle, Poverty Unemployment
4.	Partial equlibrium "Other thing remaining the same"	General equlibrium
5 Main Concern	Efficiency	equity

narrow Money supply
$M1 = C + DD$

broad
$M2 = M1 + TD$

Macro Goals of Economics

Stability in economy

1. Economic growth → Increase in production level
2. Control in inflation
3. Reduced unemployment level
4. Reduced economic unequality
5. Reduced Poverty
6. Stable foreign exchange
7. To make favourable BOP → More export less import

Instruments of Macroeconomics

Central Bank

1. Monetary Policy → Fiscal policy lai support garne
   - Expansionary → Money supply badhaune ↑ Bank rate ↓ (decrease) CBle deko loan ko rate
   - Contractionary

Government

2. Fiscal Policy → Public exp ↑ → Tax rate ~~Both in~~ (either or)

3. Foreign exchange policy
   - pegged
   - float

Monitary Policy

Objectives

1. Equlibriuy in balance of payment
2. Price stability
3. Full employment
4. Economic Growth

feature of current Monetary policy 2022/24

1. Maintaining price & balance of payments stability
2. To achieve 6% economic growth
→ The exchange rate peg of the Nepalese Rupees vis-a-vis Indian Rupees as a nominal anchor of the monetary policy has been changed unchanged.

feature of current Monetary policy of Nepal

1. To promote macroeconomic stability.
2. To enhance the productive use of financial resources
3. To expand financial access.
4. To help achieve the goal of high & sustainable economic growth.

Unit-2

Demand & Supply

Demand

- Desire to purchase
- Ability to purchase
- Willingness to pay

law of demand → Inverse relation between price and quantity.

Demand Function

$D_x = f(P_x, Y, T, P_y, E, A, Sp)$

D_x → Demand for commodities.

Main contributor → Alfraid Marshall

Elasticity of Demand and supply → degree of change relationship between price & quantity.

→ law of supply → Direct (Positive) relationship between price and quantity supply.

→ law shows only direction change doesnot show or say degree of relationship.

→ But Elasticity shows both direction change and degree of relationship between price & quantity.

→ Measure of responsiveness of quantity demand due to change in its determinants.

$Ed = \frac{\%\text{ change in demand}}{\%\text{ change in factor determining demand}}$

Types

$\frac{Q_2 - Q_1}{Q_1} \times 100\%$

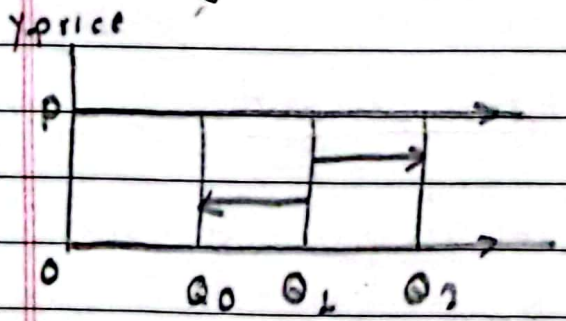
1. Price Elasticity of demand $e_p = \Delta Q_x\% / \Delta P_x\%$
2. Income elasticity of demand $e_y = \Delta Q_x\% / \Delta Y\%$
(change in one goods price effect another demand)
3. Cross elasticity of demand $e_c = \Delta Q_x\% / \Delta P_y\%$
4. Advertisement of demand $e_a = \Delta Q_x\% / \Delta A\%$

Types of price Elasticity of Demand

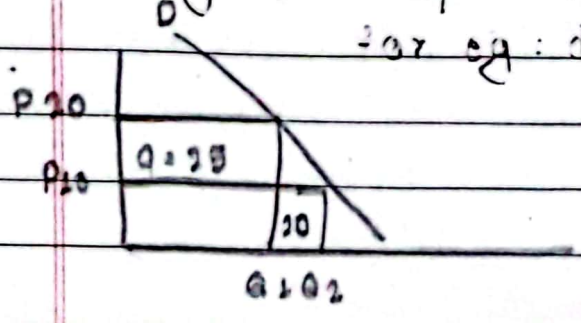
(price fluctuate vaye ni no fluctuation in demand)

1. Perfectly inelastic Elasticity of Demand ($e_p = 0$)
2. Relatively inelastic Demand ($e_p < 1$)
3. Unitary elastic Demand
4. Relative elastic Demand ($e_p > 1$)
5. Perfectly elastic Demand ($e_p = \infty$)
(nominal change in price leads to ~~change~~ infinity in change in dem and)

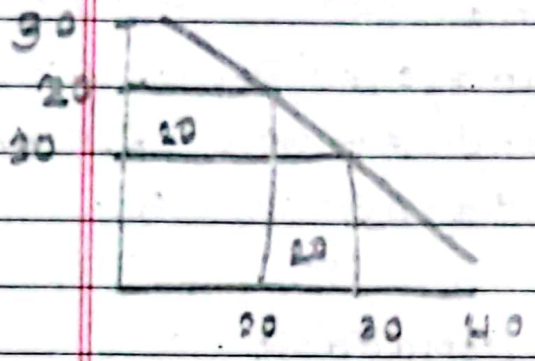
5. Small change in price leads to change in demand infinity.



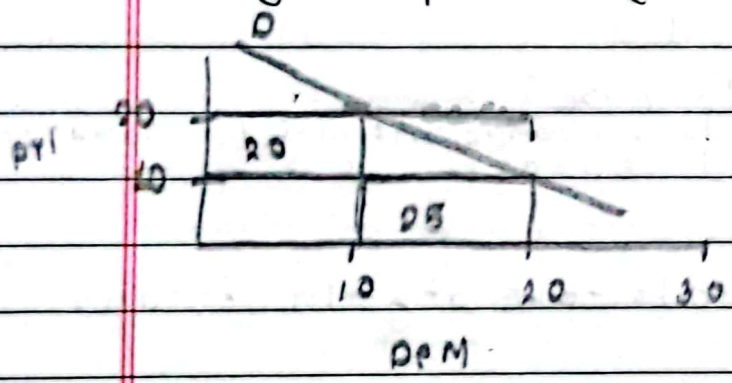
2. Change in demand is less than change in price.
for eg: daily consumption goods or necessities



3. Percentage change in demand is equal to change in price.



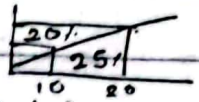
4. percentage change is demand is more than change in price. Eg. Luxury goods.



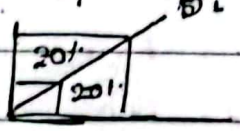
Types of Income Elasticity of Demand

1. Positive income Elasticity of Demand (ey +ve)
   a. Greater than unity (ey > 1)
   b. Equal to unity (ey = 1)
   c. Less than unity (ey < 1)
2. Negative (ey = -ve)
3. Zero (ey = 0)

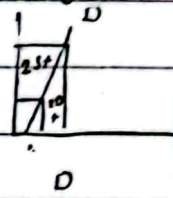
1. Increase in income Increase in Demand
   a. change in quantity Demand is greater than change in income.
   (superior goods / Luxury good) = ($e_y > 1$)



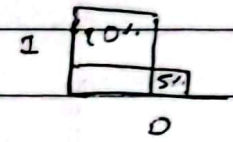
   b. change in quantity demand is equal to change in income
   (comfort goods) = ($e_y = 1$)



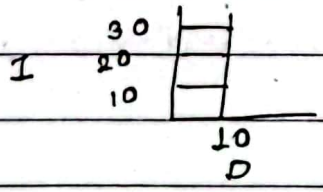
   c. Percentage change in quantity demand is less than change in income percentage.
   (Necessary goods / Necessity goods) = ($e_y < 1$)



2. Neg
   Increase in percentage in income leads to decrease in demand



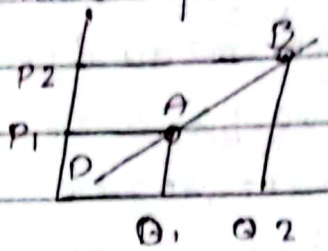
3. Zero
   Increase in income leads same or zero increase or decrease in demand.



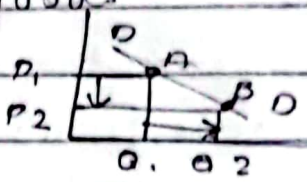
Cross Elasticity of Demand $e_{xy} = \Delta Q_{x}\% / \Delta P_{y}\%$
Quantity changed in one commodities due to change in price of another goods / commodities.

1. Positive ($e_{xy} = +ive$)
2. Negative ($e_{xy} = -ve$)
3. Zero ($e_{xy} = 0$)

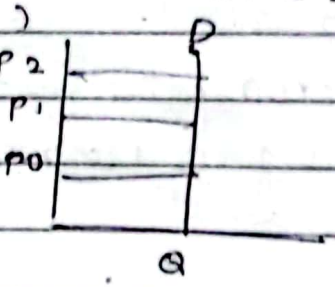
1. Exy = +ive ΔQ_{Coke} /
(substitute goods) ΔP_{Pepsi} /.
Increase in price of one commodities or decrease result increase or decrease in demand or quantity of its substitute goods.



2. Exy = -ve
(complementary goods)
Increase or Decrease in price of one complementary commodities it result in increase or decrease in demand of that particular commodities effects the demand of its complementary goods.



3. Exy = 0
(Non related (Neutral) goods)
Increase in price of car does not affect demand for sugar



use

1. To formulate business policy.
2. Price strategies.

Price elasticity measurement

proportional

PE of demand = % change in Quantity Demanded / % change in price

$$= \frac{\frac{Q_2 - Q_1}{Q_1} \times 100\%}{\frac{P_2 - P_1}{P_1} \times 100\%}$$

also

percentage method

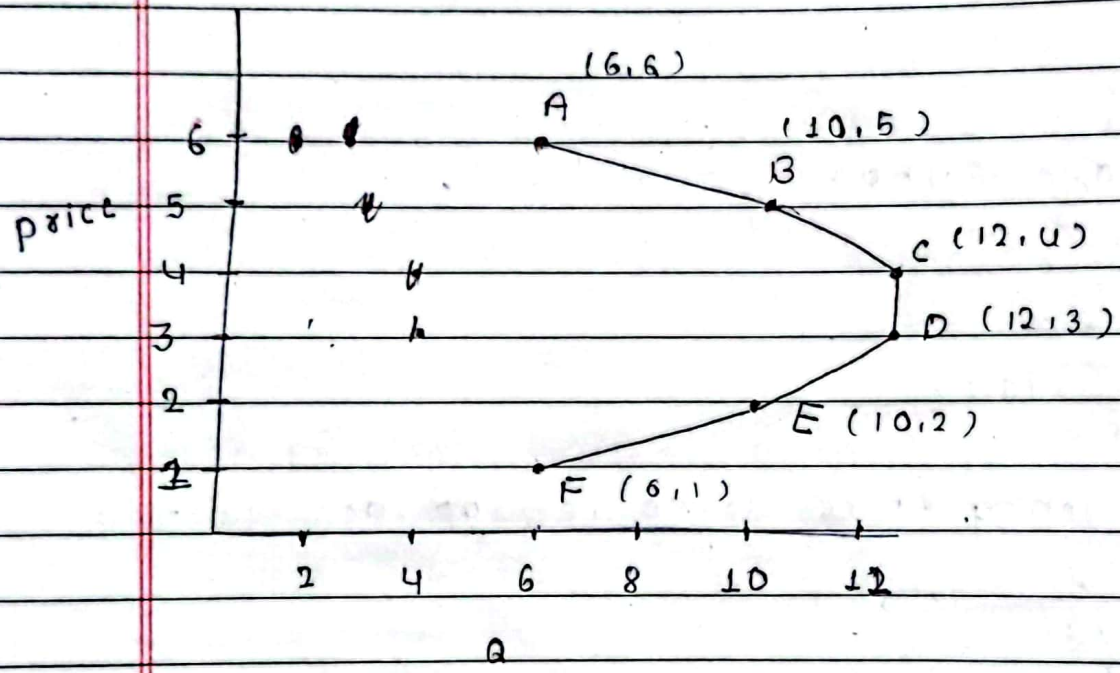
$$\frac{\frac{Q_1 - Q_2}{Q_2} \times 100\%}{\frac{P_1 - P_2}{P_1} \times 100\%}$$

Inconsistency in result so develop arc method

$$\frac{\frac{Q_2 - Q_1}{\frac{Q_2 + Q_1}{2}} \times 100\%}{\frac{P_2 - P_1}{\frac{P_2 + P_1}{2}} \times 100\%}$$

Total Outlay Method

	P	Q	TE / TO	
A	6	1	6	ep > 1
B	5	2	10	
C	4	3	12	ep = 1
D	3	4	12	
E	2	5	10	ep < 1
F	1	6	6	



Point Method

Linear

ratio between lower segment / Upper segment

At point A ep = A / AE

E ep = EA / E

Midpoint is always 1

Non linear

measured by drowing a tangent line.

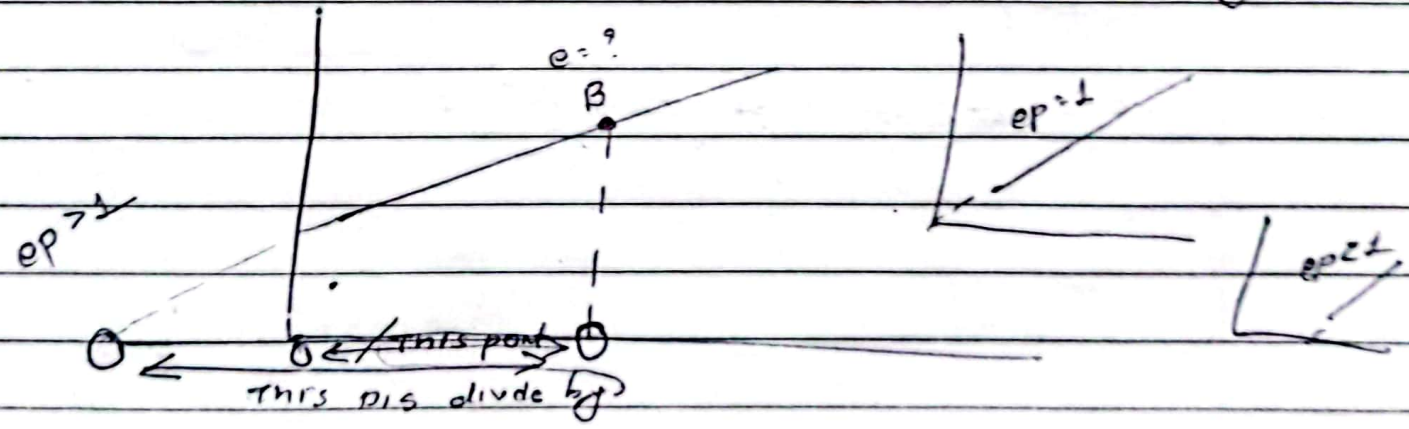
Income Elasticity of demand.

ey : percentage change in Demand
percentage change in income of customer.

Arc method
aderoge

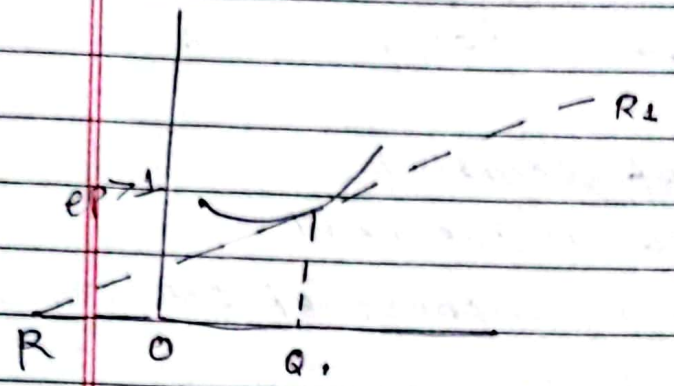
$$Ey = \frac{\frac{\text{Change in demand}}{\text{Initial Demand + New demand}}}{\frac{\text{Change in Income}}{\text{Initial Income + New Income}}}$$

point on a linear ~~Price~~ and income elasticity.



ey = ON/ON

non linear.



for $ep = \frac{Q_1 R}{Q_1 O}$

Determinants of Income Elasticity.

1. Nature of goods
2. Proportion of income
3. Level of income
4. Time period

Cross Elasticity formula.

Use of price Elasticity of demand:

1. Product pricing
2. Input pricing
3. Joint product pricing
4. Demand forcasting
5. Trade Union: to bargain for wages income → If labour is relative/less elastic/inelastic.

Use of Income Elasticity of demand

1. Business Decision making
2. Long term planning for luxuary goods
3. Market strategy
4. Housing development strategies
5. Classification of goods/services.

d. Management strategy in Busin
ess cycle.

Uses of cross

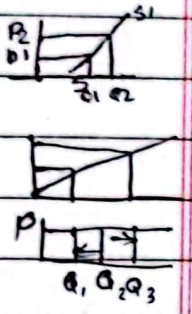
1. To formulate Business policy
2. To classify goods/services
3. Price strategies

Price Elasticity of supply

law of supply → shows positive relationship between price & quantity supply

Types of PES

- Perfectly Inelastic supply (es=0) → price change भएपनि quantity no change.
- Relatively Inelastic supply (es<1) → % change in quantity is less than % change in price
- unitary Elastic supply (es=1) → % change is quantity is equal to % change in price
- Relatively Elastic supply (es>1) → % change in quantity supply is greater than % change in price
- Perfect Elastic supply. (es=∞) → small change in price leads to infinite change in supply.



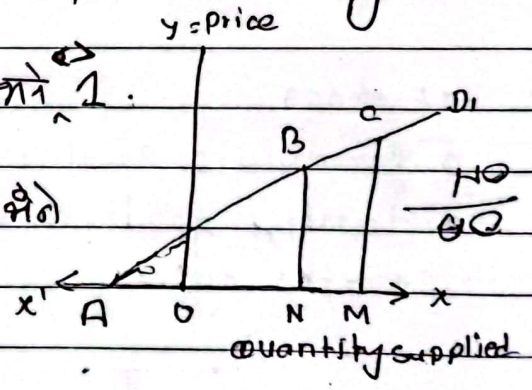
Measurement of point price elasticity

linear

⇒ origin बाट बाहिरा जाँदा गर्दा 1.

⇒ origin मा काटेको हुँदा गर्दा :

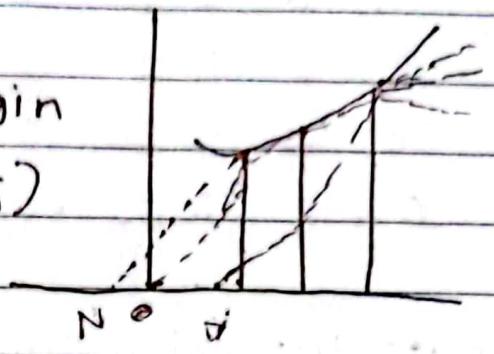
⇒ origin बटा काटेको हुँदा गर्दा equal to 1.



→ Non linear

→ 1 से ज्यादा greater है origin cross नहीं होती ($\frac{\Delta N}{\Delta A}$)

→



→ Determinants of Elasticity of supply

1) change in the cost of production
2) Time factor
3) Nature of Commodity
4) Availability of facilities for expanding outputs.

Measurement of price elasticity of supply

$$Ss = \frac{Q2 - Q1}{P2 - P1} \quad \frac{P2 + P1}{Q2 + Q1}$$

$$\frac{\frac{Q2 - Q1}{Q} \times 100}{\frac{P2 - P1}{P1} \times 100\ \%}$$

Point	A	B	C	D	E
P_x	8	6	4	2	0
Q_{sx}	50	40	30	20	10
Q_{dx}	0	15	30	45	60

i. Compute the price elasticity of supply at movement from B to D by percentage and Arc method.

soln,

We have given:

$P_1 = 6 \quad P_2 = 2$

$Q_1 = 40 \quad Q_2 = 20$

We know that price elasticity of supply in % metho

$$e_s = \frac{\frac{q_2 - q_1}{q_1} \times 100}{\frac{P_2 - P_1}{P_1} \times 100}$$

$$= \frac{\frac{20 - 40}{40} \times 100}{\frac{2 - 6}{6} \times 100}$$

$$= \frac{-\frac{20}{40} \times 100}{\frac{4}{6} \times 100}$$

$$= \frac{-2}{4} \times -\frac{6}{4}\,3$$

$$= 3/4 = 0.75$$

We known that Price elasticity of supply in arc method.

$$e_s = \frac{q_2 - q_1}{p_2 - p_1} \times \frac{p_2 + p_1}{q_2 + q_1} = \frac{20 - 40}{2 - 6} \times \frac{2 + 6}{20 + 40} = \frac{20}{4} \times \frac{8}{6}$$

$$= \frac{1}{2} \times \frac{4}{3}$$

$$= 0.66$$

Intrepretation : 1% increase in price lead to increase in quantity supply by 0.66%.

	Quantity demanded	
	Income Rs: 20000	Income Rs 2500
price		
Rs 180 = P_1	$q_1 = 80$	100
Rs 220 = P_2	$q_2 = 60$	80

i) Calculate price elasticity of Demand when income is Rs 2000.

ii. Calculate income elasticity of demand when price is Rs 220.

Soln.

given.

$P_1 = 180$ $q_1 = 80$

$P_2 = 220$ $q_2 = 60$

we known that,

$$ep = \frac{q_2 - q_1}{P_2 - P_1} \times \frac{P_2 + P_1}{q_2 + q_1}$$

$$= \frac{60 - 80}{220 - 180} \times \frac{220 + 180}{60 + 80}$$

$$= \frac{-20}{40} \times \frac{400}{140} \text{ or } 5$$

$$= \frac{-10}{7} = -1.42$$

Interpretation: 1% increase in price leads to decrease in quantity demand by 1.42%. Other thing remains the same.

Q.NO. 2

$q_1 = 60, q_2 = 80$

$Y_1 = 20000, Y_2 = 25000$

We know that:

$$Cy = \frac{q_2 - q_1}{Y_2 - Y_1} \times \frac{Y_2 + Y_1}{q_2 + q_1}$$

$$= \frac{80 - 60}{25000 - 20000} \times \frac{25000 + 20000}{80 + 60}$$

$$= \frac{20}{5000} \times \frac{45000}{140}$$

$$= \frac{9}{7}$$

$= 1.28$

Interpretation: 1% increase in income leads to increase in quantity demand by 1.28%. Other things remains same

Price elasticity of supply of a good is 5. A producer sells 500 units of this good at Rs 5 per unit. How much will sell at the price of Rs 6 per unit?

Soln

given,

$e_s = 5$

$Q_1 = 500$

$P_1 = 5$

$P_2 = 6$

$Q_2 = ?$

Now,

$$e_s = \frac{Q_2 - Q_1}{P_2 - P_1} \times \frac{P_2 + P_1}{Q_2 + Q_1}$$

$$\text{or, } 5 = \frac{Q_2 - 500}{6 - 5} \times \frac{6 + 5}{Q_2 + 500}$$

$$\text{or, } 5 = \frac{11(Q_2 - 500)}{1(Q_2 + 500)}$$

$$\text{or, } 5Q_2 + 2500 = 11Q_2 - 5500$$

$$\text{or, } 2500 + 5500 = 11Q_2 - 5Q_2$$

$$\text{or, } 8000 = 6Q_2$$

$$\text{or, } \frac{8000}{6} = Q_2$$

$$\therefore Q_2 = 1333.33$$

Point	A	B	C	D	E	F	G	H
Price of Rara Noodle (Prara per packet)	28	24	20	16 (P_1)	12 (P_2)	8	4	0
Quantity Demand of RaRa (Qd rara) per packet	0	20000	40000	60000	80000	100000	120000	140000
Qd wai-wai noodles (Packet)	100000	90000	80000	70000 (q1)	60000 (q2)	50000	40000	30000
Quantity supply of RaRa (Qs rara)	90000	80000	70000	60000	50000	40000	30000	20000

Q. Compute the cross elasticity of wai-wai noodle as price of rara noodle decrease from RS 16 & RS 12 per packet & interpret the result.

Soln.

$$C_{wai-wai} = \frac{Q_{wai-wai2} - Q_{rara1}}{P_{rara2} - P_{rara1}} \times \frac{P_{rara2} + P_{rara1}}{Q_{wai2} + Q_{wai1}}$$

$$= \frac{60000 - 70000}{12 - 16} \times \frac{12 + 16}{60000 + 70000}$$

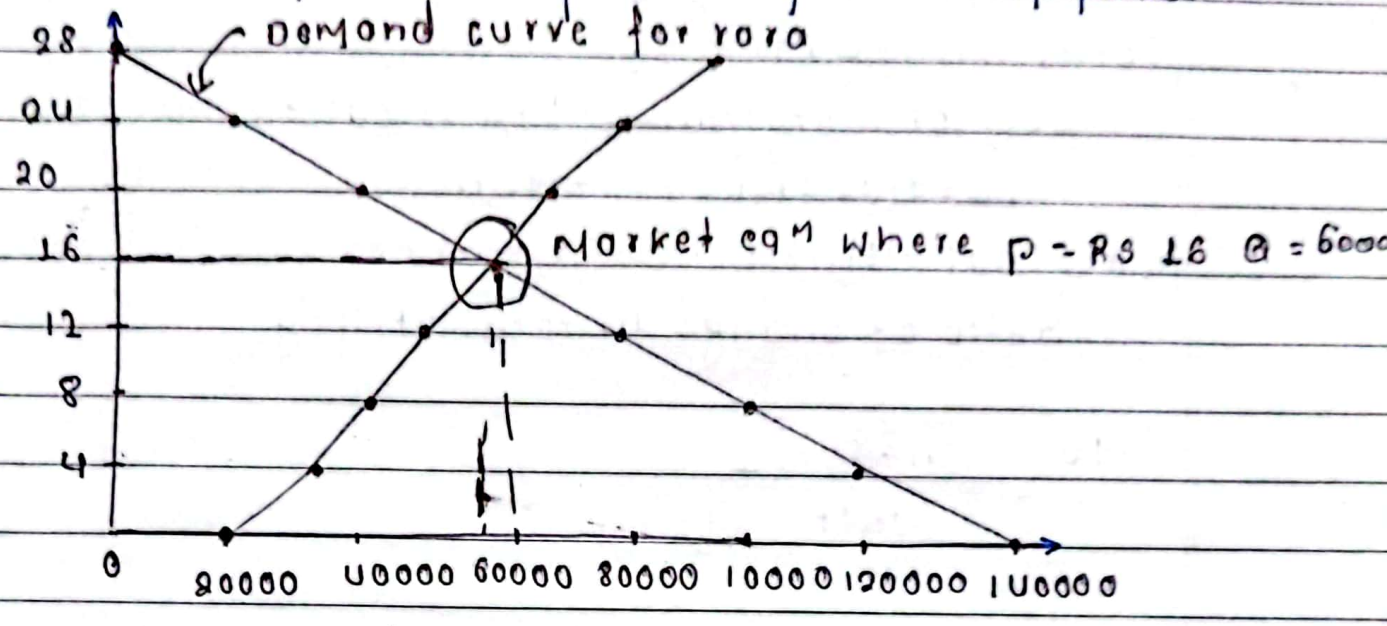
$$= \frac{-10000}{-4} \times \frac{28}{130000}$$

$$= +\frac{7}{13}$$

$$= 0.54$$

Interpretation : 1% increase in price of RaRa noodle leads to increase in Demand of wai-wai noodle packet by 0.54% other thing remain same.

b. Plot the demand and supply quantity of RaRa noodle and findout market equilibrium price.



Concept of cardinal and ordinary utility Analysis.

Utility:

Want satisfying power of comodities. It is satisfaction obtained from consumption of comodities.

Two approaches :-

1. Cardinal utility :-
   - HH Gossen
   - further Alfred Marshall.
   - Utility can be measured in cardinal number.
   - Can be express in quantative term.

Analysis based on assumption :
   - Rationality
   - Cardinal Measurement
   - Constant Marginal utility of money

Types of utility

Total utility (TU) :-

Sum of Marginal utility is called TU.

$TU = MU_1 + MU_2 \ldots + MU_n$

Marginal utility

Ratio of change in total utility

$$MU = \frac{TU_n - TU_{n-1}}{Unit}$$

law of Diminishing Marginal utility :-

- The additional benefit which a person derives from given increase of his stock of a thing diminishes with every increase in stock that he already has.

Assumption

All unit of consumption is homogenous.

There is no time gap.

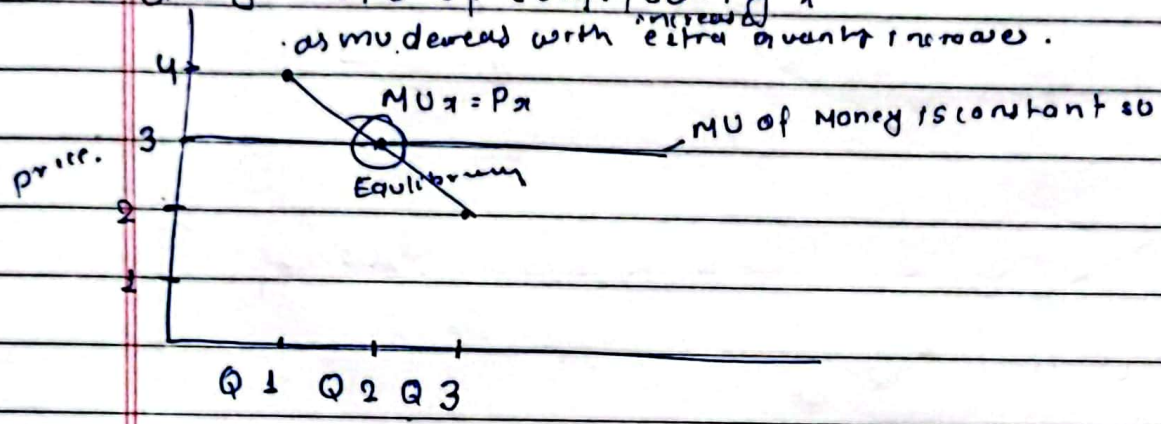
Unit	TU	MU
1	20	
2	35	15
3	45	10
4	52	7
5	55	3

Consumption's Equilibrium under Law of Diminishing MU (single commodity case):-

- Under this condition, the customer is in equilibrium when the MU of x is equal to its market price

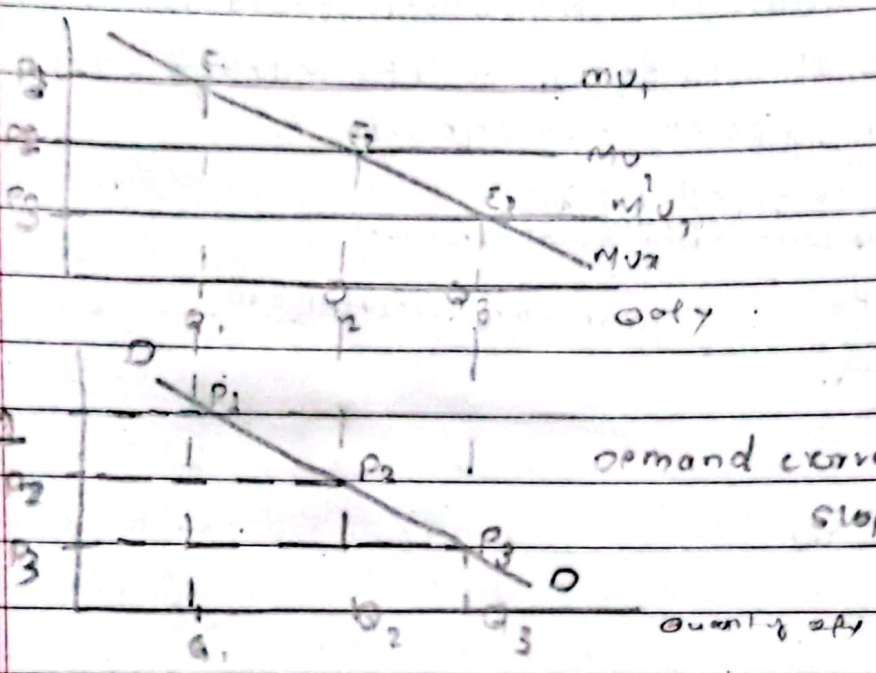
$[MU_x = P_x]$ ↑ price of commodity x

↓ MU of commodity x



~~Determin~~ Derivation of Demand curve from law of Diminishing MU.

Determinington of Demand curve from Law of Diminis
ing marginal utility.



Consumer's Equilibrium :

Law of Equi:- Marginal utility

- Two or more goods
- Consumer will get max sat only when he obtain equal marginal utilities from consumpn of diffn commodn

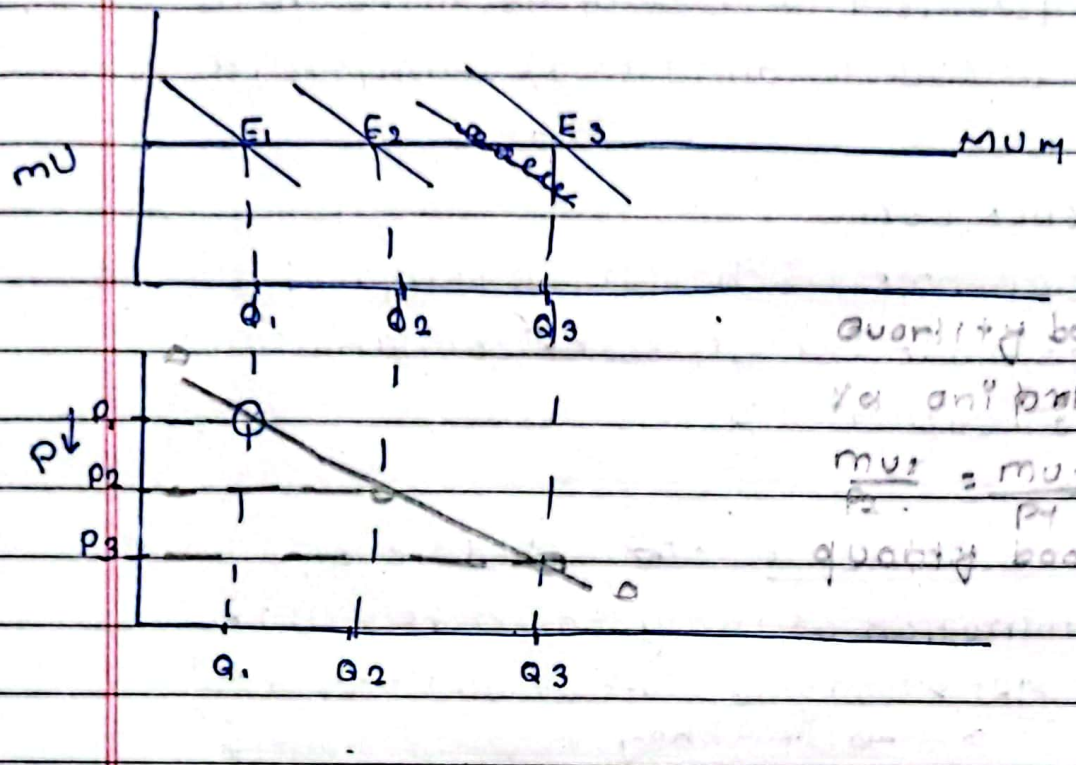
$$\frac{MU_x}{P_x} = \frac{MU_y}{P_y} = MU$$

Rs 10 → commodities Rs2 & Rs2

unit	MU_1	MU_y	$\frac{MU_1}{P_{MU_1}}$	$\frac{MU_y}{P_{MU_y}}$
1	10	10		
2	12	8		
3	10	6		
4	8	4		

different goods hunra yeta chai?

Derivation of demand curve from law of Equi-Marginal utility.



quantity badhaya vane MU ghat
ra ani price ghatako le
$\frac{mu_1}{p_1} = \frac{mu_2}{p_2}$ maintain garna
quanty badhaunu parne

$\frac{8}{1} > \frac{8}{2}$

P. G. U

Criticisms of Cordinal Approach

1. Cardinal measurement of utility is not correct :-
2. Constany of marginal utility of money.
3. It is not applied in indivisible goods
4. It is not valid in some goods eg. hobby

Ordinal Utility Analysis

Here customers need to determine only their preference ranking of bundles of commodities

Indifference curve

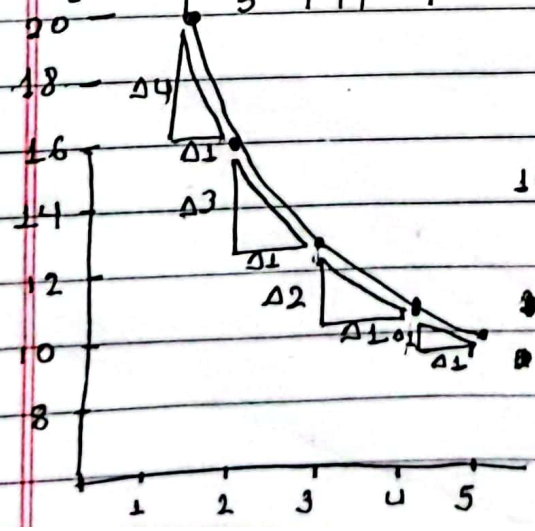
Explain consumer's behavior in terms of his preference or make for different combination of two goods, say 'x' & 'y'.

Indifference schedule :- schedule of various combination of two goods that will be equally

MRS → Marginal Rate of Substitution = $\frac{\Delta y}{\Delta x}$
→ always diminishing

point	x	y	
A	1	25	more than one x
B	2	20	5
C	3	15	4
D	4	13	3
E	5	11	2

point	x	y		MRS
A	1	20	4	
B	2	16	3	$\frac{-4}{1} = -4$
C	3	13	2	$\frac{-3}{1} = -3$
D	4	11	1	$\frac{-2}{1} = -2$
E	5	10		$\frac{-1}{1} = -1$

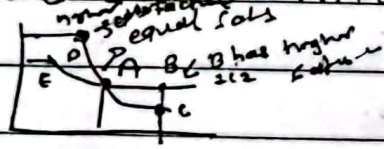


properties of IC

1. difference curves slopes downward to the right : If cons want more units of
2. one goods he will reduce units of other goods
3. If he want to remain same level of satisfaction

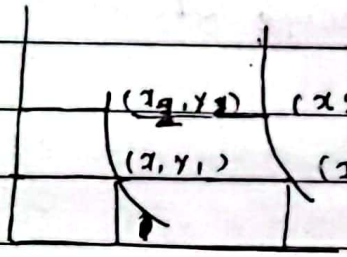
1. Connot take following shape 

2. An IC is convex to origin. MRSxy diminishing phase ma vako vayera

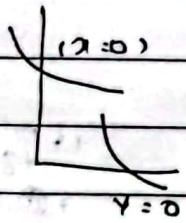
3. IC connot intersect eachother


so no consistency.

4. Higher IC represents higher level of satisfaction
curve origin bata jati tada quo teti higher satisfaction
as jati ~~consumption~~ goods & services ko bandle badi huna teti satisfaction badcha.



5. IC never touches x or y axis as it required atleast two goods or service (x=0) (y=0)



Marginal rate of substitution:-
rate at which one commodities is substituted for another to maintain same level of satisfact

MRS
law of diminishing marginal rate of substition always declining why?: ↓ diminish
1. Goods are not perfect substitute
2. Availability of quality of goods.

Budget line / Budget constraint / price line :-
locus of comb of any two goods that can be purchased by spending all fixed income at given price.

$P_x Q_x + P_y Q_y = B$

Budget = 20

$P_x = 20$

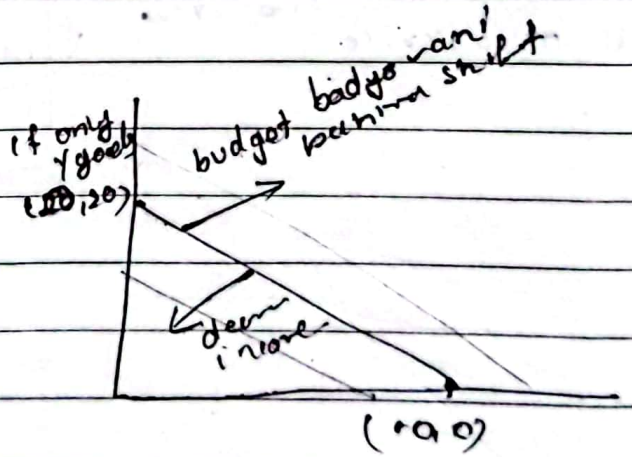
$P_y = 10$

when consumer purchase only x

$20 Q_x + 10 Q_y = 200$

$20 Q_x + 0 = 200$

$\therefore Q_x = 20$



price increase

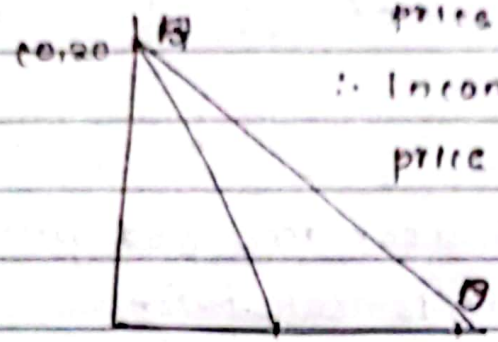
B = 200

P_X = 80 → 40

P_Y = 10

∴ Income badhda bahira janxa but price badhda bitra janxa

∴ Income ghatda bitra janxa but price gaida bahira janxa.



40 Qx + 0.200

$Q_X = \frac{200}{40} = 5$

Consumer Equilibrium - IMP

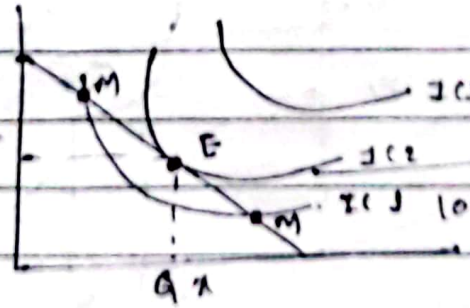
A C is E when he/she maximizes his/her satisfaction under budget constraints.

C is E position where the budget line is tangent to the highest possible IC.

condition :-

- BL should tangent to IC
- IC must be convex to the origin at the point of tangent

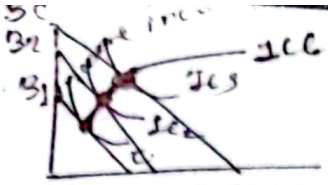
origin bata tada sabai gayo teti badi satisfaction.



convex to origin also tangency slope at budget line is equal at IC2 so equilibrium.

first condition is fulfill in all but second cond. is fulfill in IC2 only. So consume Q_X & Q_Y goods.

Sujita



Income consumption curve :- shows the effect of income

Income effect & derivation of Engel Curve :-

Income effect :- shows total effect on demand for goods due to change in price

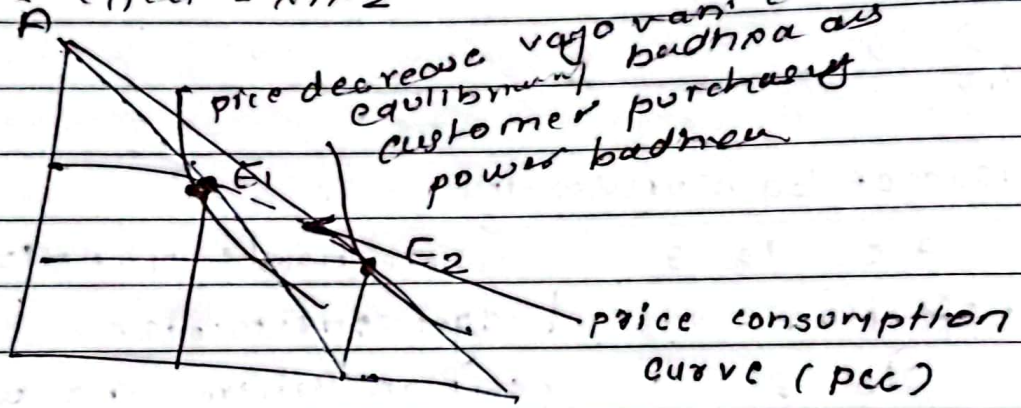
positive :- I↑ = D↑ , I↓ = D↓ , normal goods.

Negative :- ~~I↓ = D↑~~ , I↑ = D↓ , interior goods.

price effect - effect on customer equilibrium due to change in price of the commodity

price of x is decreased and price of y and consumers Budget is constant

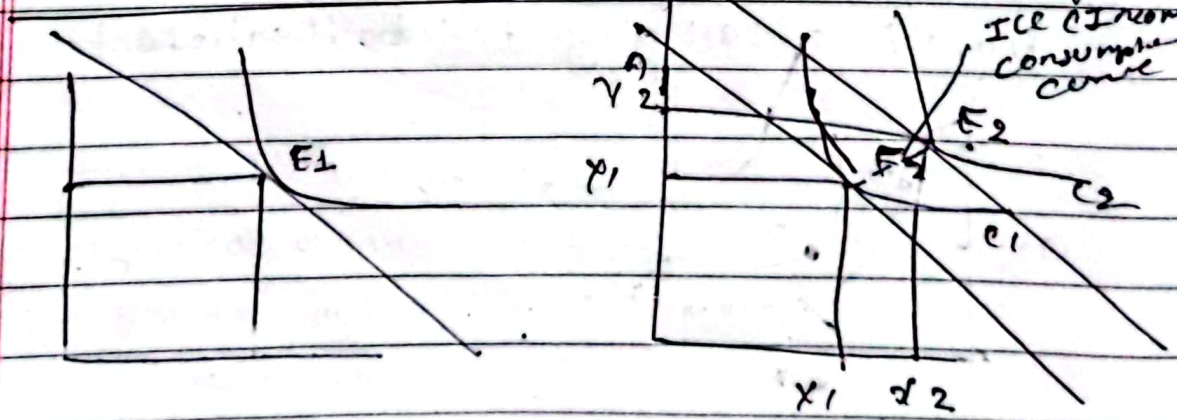
price effect = x1x2



price ma auko fluctuate le baneko 2 wa 2 vanda badi Equilibrium lai line lai connect garda we get PCC.

Income effect :- Income increase huda bahira ratra inward shift

customer C



x1 & x2 → Income effect.

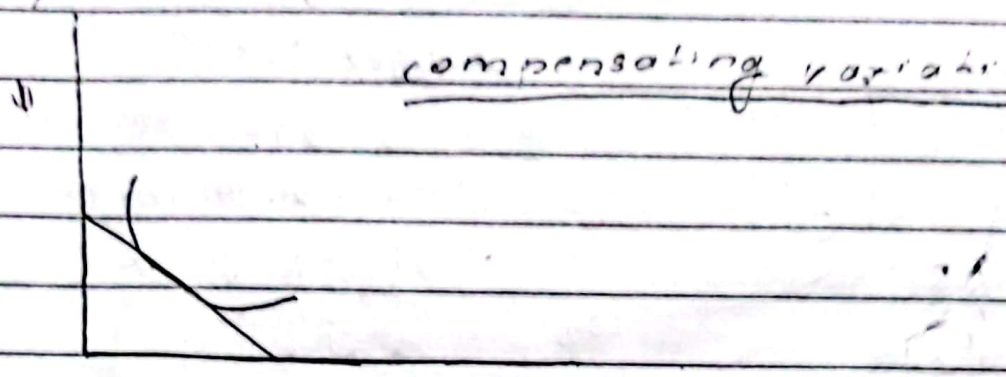
price effect substitution effect.

Decomposition of PE into SE and IE income effect.

Hicksian Approach :-

price effect : subs E + IE

compensating variation method :

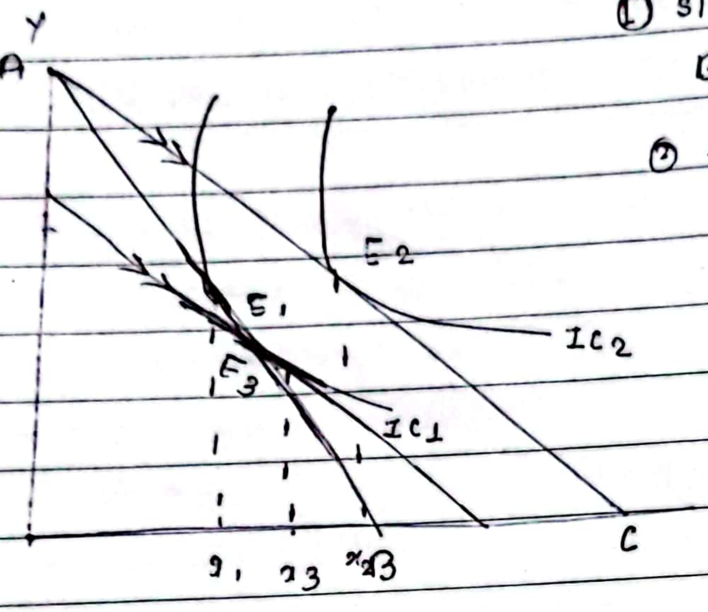


Normal good case.

Decomposition of price Effect into Substitution Effect & Income Effect.

PE = SE + IE

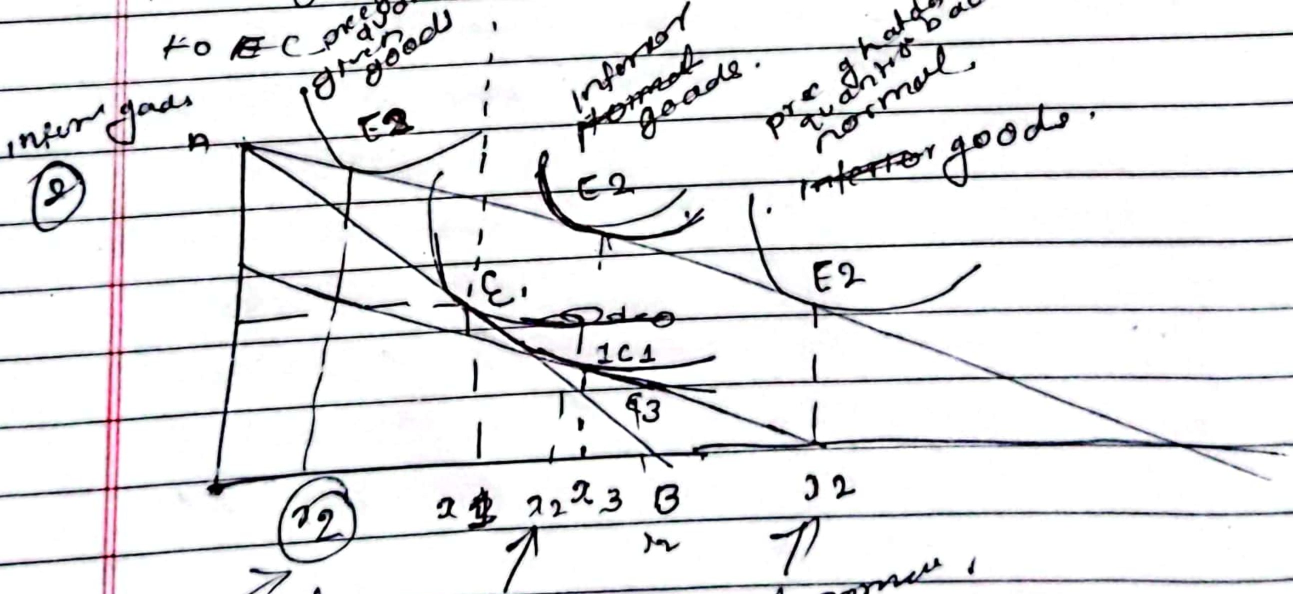
1. slope of IR = slope of Budget line
2. IC is convex to the origin at the pt of tangency



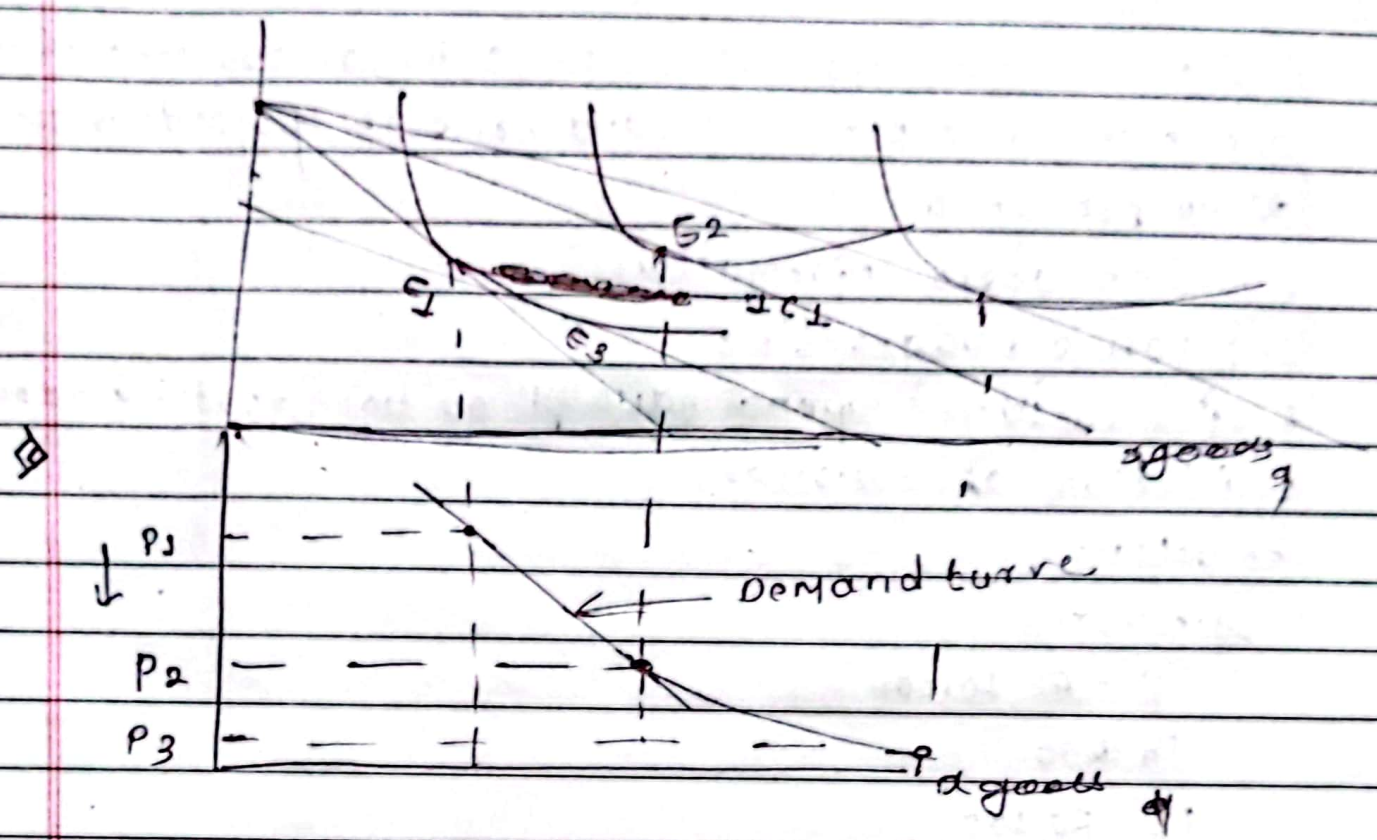
Giffen good + rela. with price
Inferior - relation with price

Movement from E1 to E2 → S.E
" " E1 to E3 → P.E

y ko compons mo x sonsto rayo
Tax lagi ko such a way that E3 is par to EC



Demand curve derivation.



Numericals:

Suppose a customer has income Rs 10,000. Price of x goods is Rs 50 per unit and price of y goods is Rs 100 per unit.

Based on above information:

1. Draw a budget line
2. If a customer spends equally on both goods, find out equilibrium of customers.

Solution:

given:-

B = Rs 10,000

P_x = Rs 50

P_y = Rs 100

We know that,

$B = P_x \cdot x + P_y \cdot y$ or, $[P_x \cdot Q_x + P_y \cdot Q_y) \Rightarrow 10000 = 50x + 100y$

If a customers consume only x goods (i.e. $Q_y (= Y) = 0$)

or, $10000 = 50x + 100 \times 0$

or, $\frac{10000}{50} = x$

$\therefore x = 200$

We get first point (200, 0) at Budget line

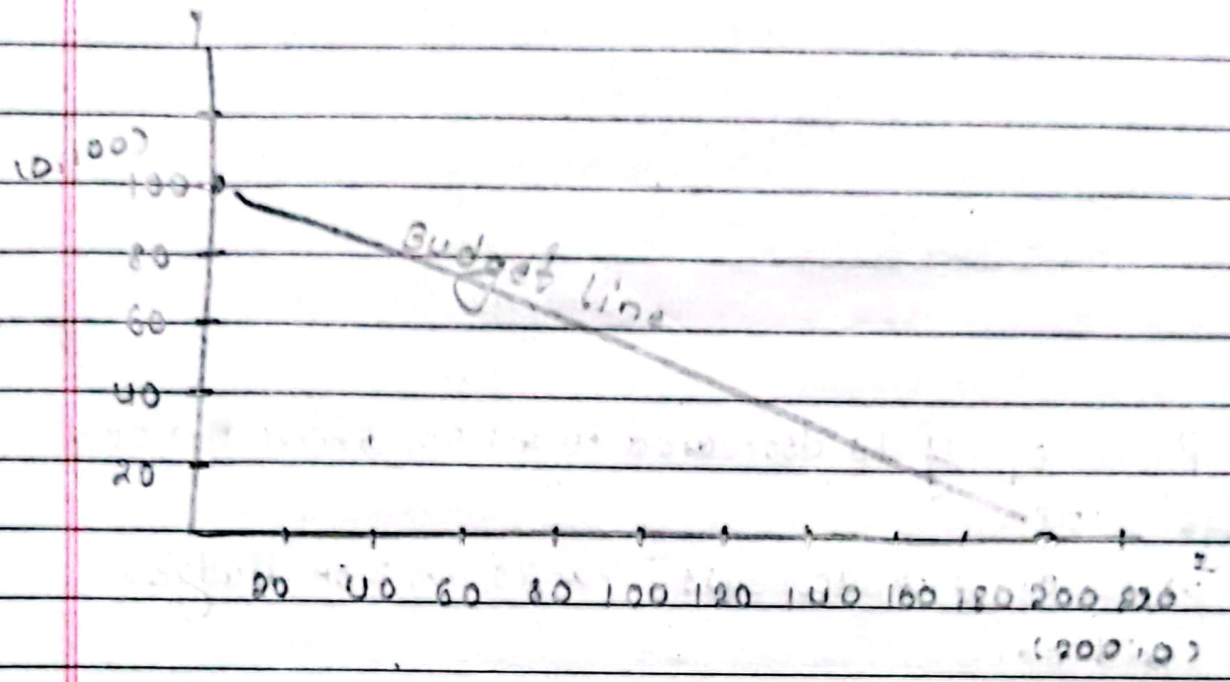
To find second point, we also suppose that customer consumes only y-goods (i.e $x = 0$ or, $Q_x = 0$)

Again,

$10000 = 50 \times 0 + 100y$

or, $\frac{10000}{100} = y$ $\therefore y = 100$

We get second point (0,100) of Budget line.
After joining Both points, we get Budget line as below :-



ii. If Customer spend equally on both goods.
Budget available to x goods is Rs5000.

So, $P_x \cdot x = 5000$

Or, $50x = 5000$

$\therefore x = 100$

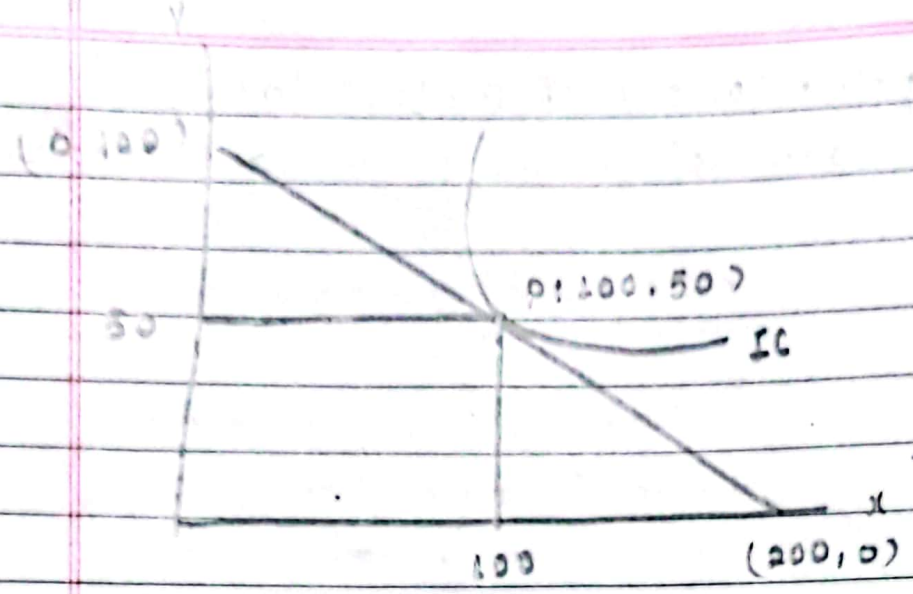
Similarly, Budget available to y goods in Rs 5000

So, $P_y \cdot Y = 5000$

Or, $100y = 5000$

$\therefore y = 50$

So, equilibrium point is (100, 50)



iii. If price of y is decreased to Rs 50, show the new Budget line.

As price of y is decreased to Rs 50, New Budget line will be.

$10000 = 50y + 50x$

~~Or, 10000 = 8~~ Suppose customer consume only y goods after decreasing in price of y good.

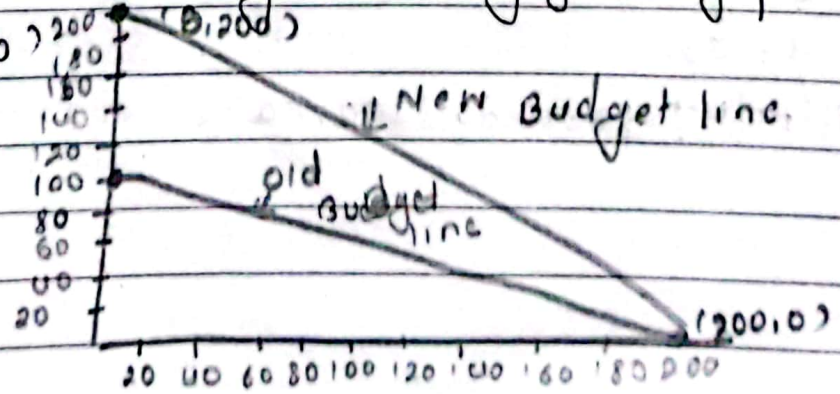
i.e $50y = 10000$

$\therefore y = 200$

New point in y axis is (0, 200)

we have already found the point in x-axis as (200, 0)

We get New Budget line after joining these two points (0, 200) (200, 0)



iv. find the New equilibrium after decreasing in price of y if, customer spends equally on two goods.

As consumer has Rs 10,000 as a Budget for purchasing x and y goods. If Consumer consumes both goods with equal Budget.

i.e $\therefore 5000 = 50x$

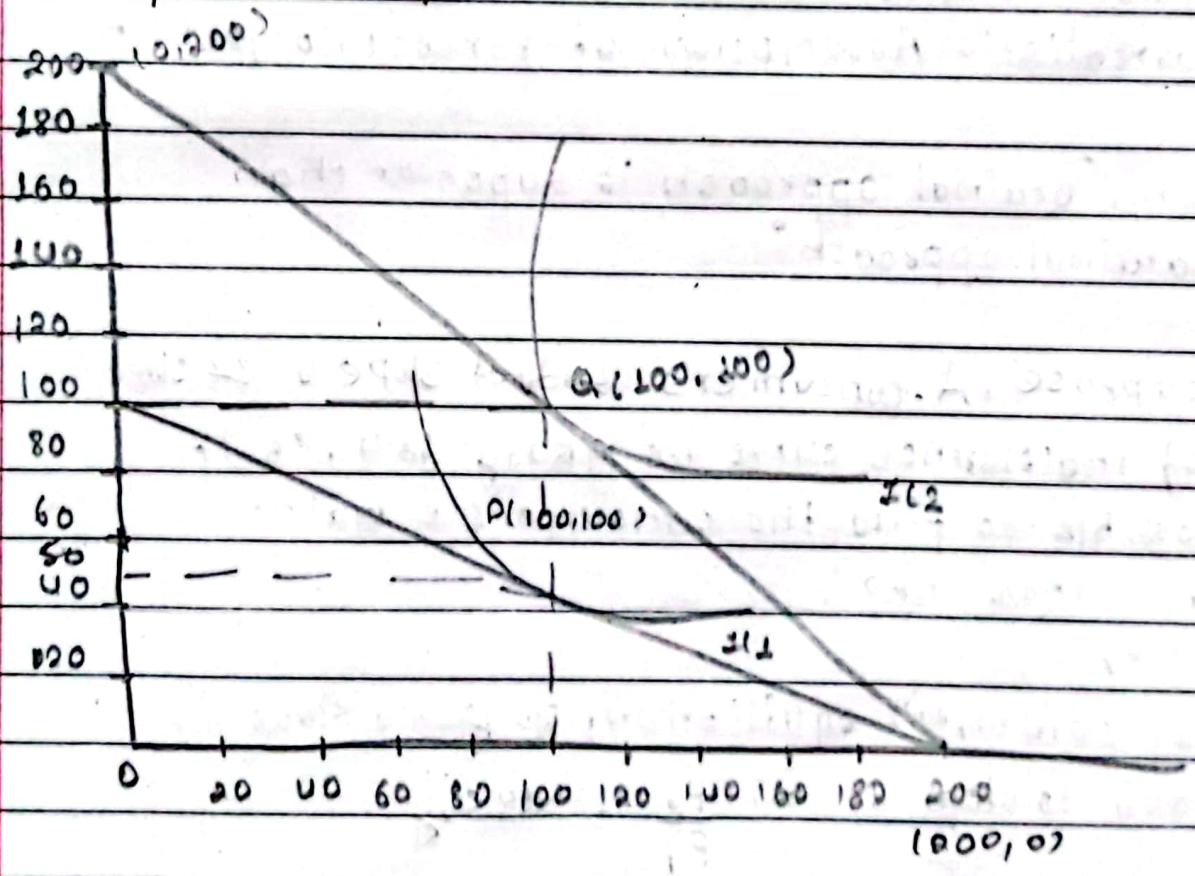
$$\frac{5000}{50} = x$$

$\therefore x = 100$

and $5000 = 50y$

$\therefore y = 100$

So equilibrium point E(100, 100)



y is normal goods as there is inverse relation between price & quantity.

negative relation

v. Describe the Nature of y goods.

Indifference curve Map

Criticism

1. Two commodity Model: so cannot solve human problem.
2. Wrong Assumption of Rational Consumer:-
3. No newness:
4. Assumption based on No change in Income, preference and habit.
5. Unrealistic Assumption of perfect Competition.

Why ordinal approach is superior than Cardinal approach?

Suppose, A consumer's Budget slope is 2 & slope of indifference curve i.e MRSxy is 4, is it possible to find the consumer's e quilibrium from above info?

Soln,

If consumer's equilibrium, Budget's slope is equal to slope of IC, $\frac{P_x}{P_y} = MRS_{xy}$

But we have given, $\frac{P_x}{P_y} = \frac{2}{1}$ & $MRS_{xy} = \frac{4}{1}$

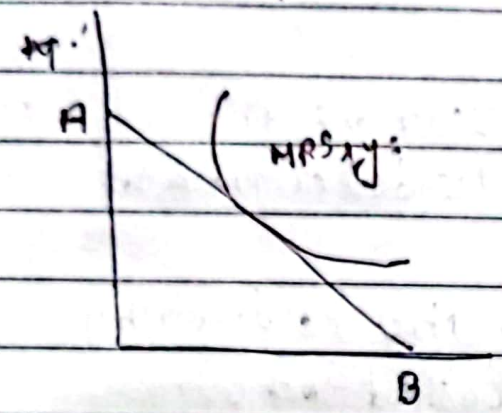
and $\frac{2}{1} \neq \frac{4}{1}$,

Thus, it is not possible to find the consumer's equilibrium from given information.

Q. What is the price ratio of two goods if MRS is given as 8?

Soln.

We known that MRS_{xy} is equal to price ratio (i.e. P_x/P_y) when consumer is in equilibrium.



So, $MRS_{xy} = 8 = \frac{P_x}{P_y}$ → Budget line slope.
↗ Slope of indifference curve

or, $\frac{8}{1} = \frac{P_x}{P_y}$

$\therefore MRS_{xy} = \frac{P_x}{P_y}$

So, MRS

Unit -4

Cost → खर्च

land
↳ Rent
Labour
↳ wages
Capital
↳ Interest
Entrepreneur
↳ profit.

Concept of cost

Input the sum of total expenses incurred plus imputed cost and normal profit expected by the producer are together called cost of the production of the comodity.

Cost Function

The mathematical expression of the relationship between cost & its determinants

Cost curve — graphical representation showing the relationship between output & cost is called cost curve

different concept of cost

1a Actual cost :-

real factor of production ma kharche goreko cost. (payment made during factor of production done outside. which is record in books of accounts for all practical purpose.

also

Money cost

8. Opportunity cost :-

option no. choose best and after that best → next best is called Opportunity cost.

→ Defined as the value of next best commodity what could have been produced by the use of the same resources that can be used to produce many thing.

9. a. Explict Costs : all types of monetary expenses incurred on those inputs which are owned by outsiders (producers) expect

Implict cost : all types of estimated costs incurred on those inputs which are owned by producer himself/herself.

Traditional theory of cost.

- has identified short run & long run cost

Some factor are fixed & Some factor are variable	All factors are variable

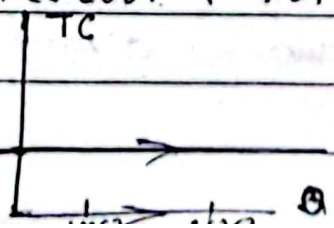
In short run, there are fixed cost & Variable cost

In long run, All factors are variable & so all are variable cost only.

Short Run Total cost (STC) :-

STC/TC consist of Total fixedcost & Total variable cost

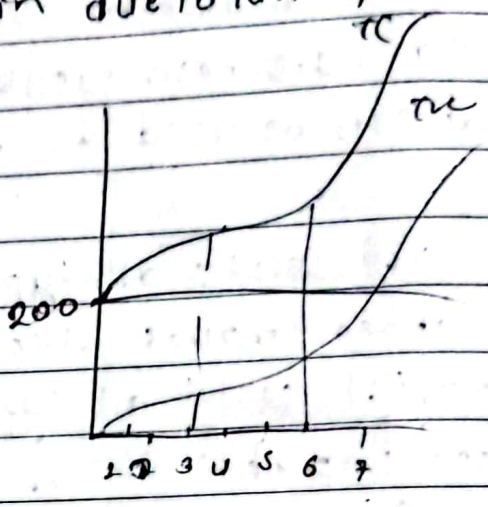
[TC = TFC + TVC]



Total variable cost:-

TVC changes according to the level of output.

→ shape of TVC is inversed - S shape starting from the origin due to law of variable proportion.



Why does TC or TVC increases at diminishing rate initially and at increasing rate late?

or

Why

→ • Behavior of TC or TVC curve follows the directly to the law of variable proportion.

Short Run Average Costs

$\frac{TC}{Q} = \frac{TVC}{Q} + \frac{TFC}{Q}$ → Average.

Divided by quantity we get Average.

1. Average Fixed cost (AFC) :- Always decreasing quantity jotl increase vayo tetl close to ~~ox~~ x line.

AFC = TFC / Q

2. Average Variable cost (AVC)

AVC = TVC / Q

3. Average cost (AC)

$$AC = TC/Q = \frac{(TFC+TVC)}{Q} = AFC + AVC$$

Characteristics of ACC (Average cost curve) in short run

→ AFC curve falls continuously at diminishing rate fall at high rate initially and at slow rate later with output increase

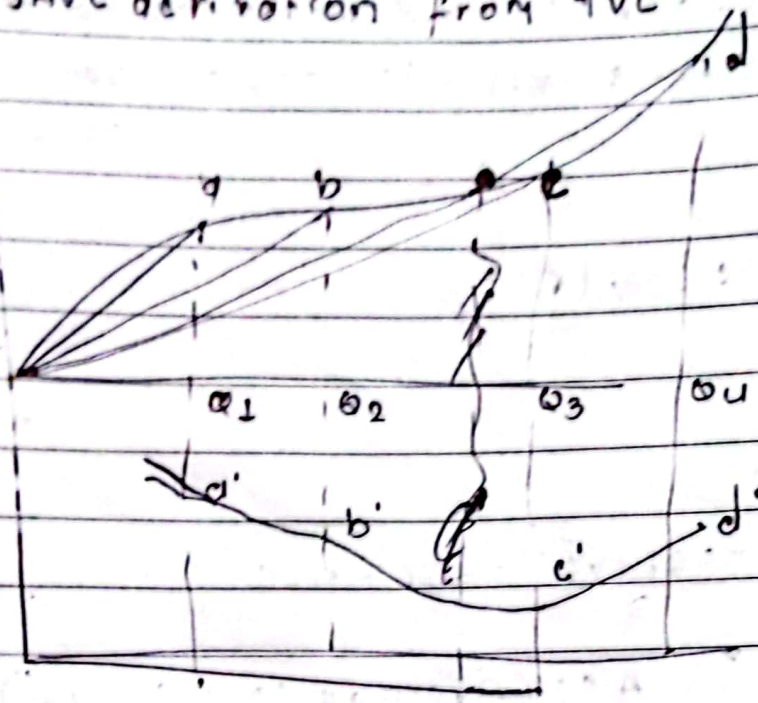
→ AVC curve decrease when TVC increase at a decreasing rate & AVC decrease " " " " " increasing rate. ∪

→ AC in the short run falls initially reaches at its minimum & it rises later as output increases.

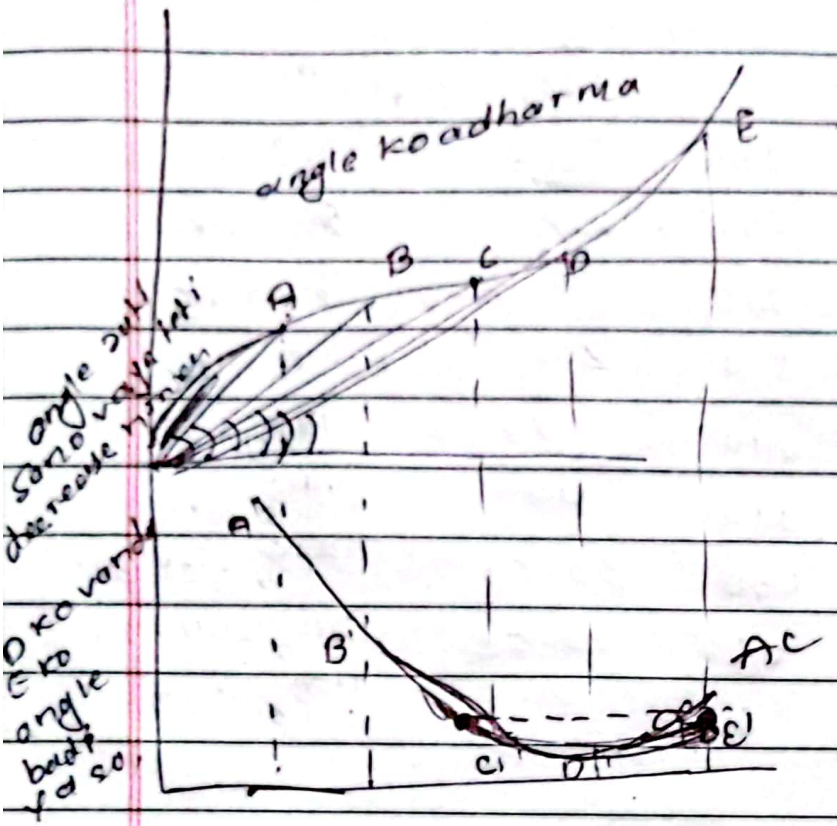
Trend of AC

Depend on trend of AFC & AVC

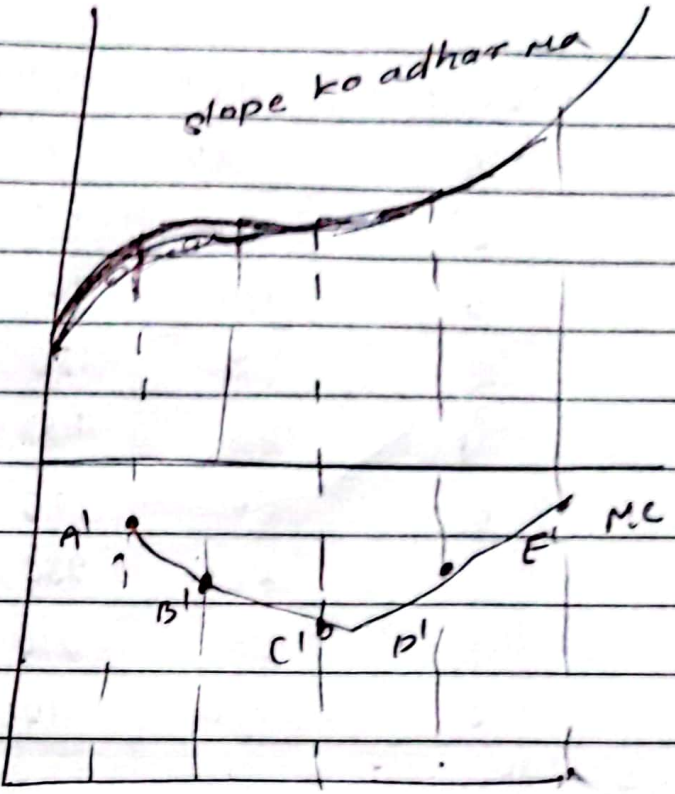
SAVC derivation from TVC



Derivation of AC

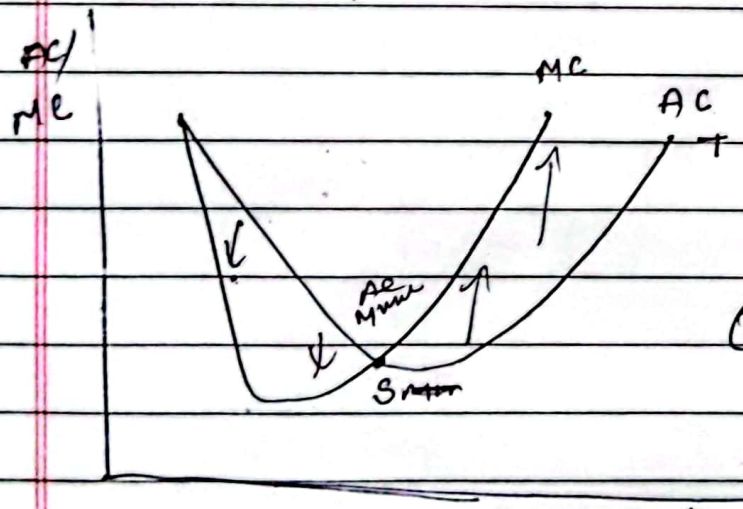


Derivation of MC



Shape of AC & MC → Ushape

relationship →



(1). When AC is decreasing.
MC < AC

(2). When AC is minimum
MC = AC

(3). When AC is increasing
MC > AC

(iv) Both AC & MC are U shaped.

v. Both AC & MC are derived from TC

vi. Minimum point of MC lies leftward to minimum point of AC

Numerical

output	TFC	TVC	TC (TFC + TVC)	AFC = TFC/Q	AVC = TVC/Q
0	200	-	200		
1	200	50	250	$200/1 = 200$	$50/1 = 50$
2	200	90	290	$200/2 = 100$	$90/2 = 45$
3	200	120	320	$200/3 = 66.67$	$120/3 = 40$
4	200	140	340	50	$140/4 = 35$
5	200	175	375	40	$175/5 = 35$
6	200	230	430	33.33	$230/6 = 38.33$
7	200	310	510	28.57	$310/7 = 44.28$
8	200	400	600	25	$400/8 = 50$

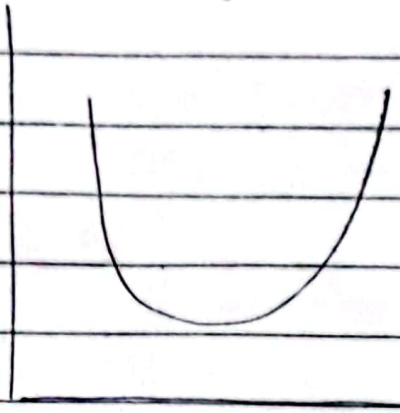
$\Delta TVC = \Delta TC$

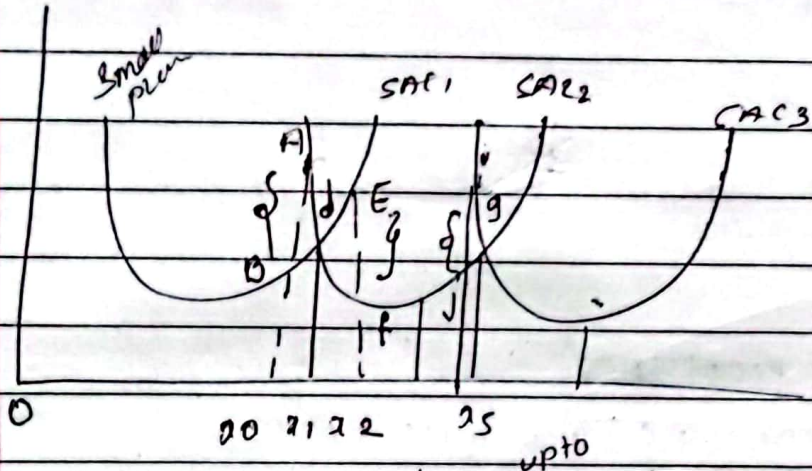
Calculate TC, AFC, AVC, AC & MC, if TFC is 200

AC = TC/Q	MC = $\Delta TC / \Delta Q$
-	~~40~~
250	50
145	40
106.66	30
~~85~~	20
75	35
71.66	~~55~~
72.85	~~80~~
75	~~90~~
	~~80~~

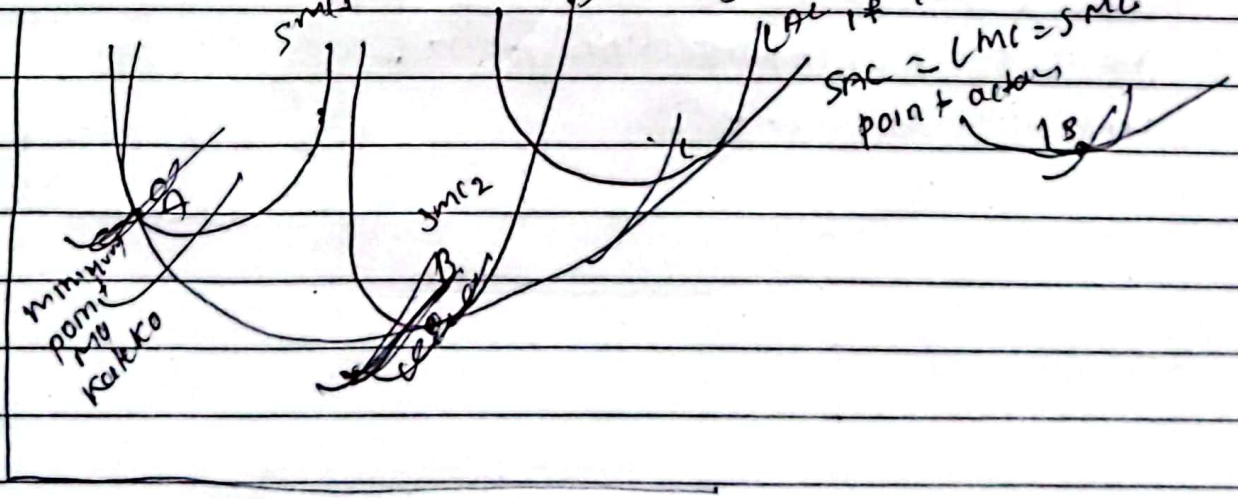
Derivation of LAC from SAC

LAC [Long-run Average cost curve]

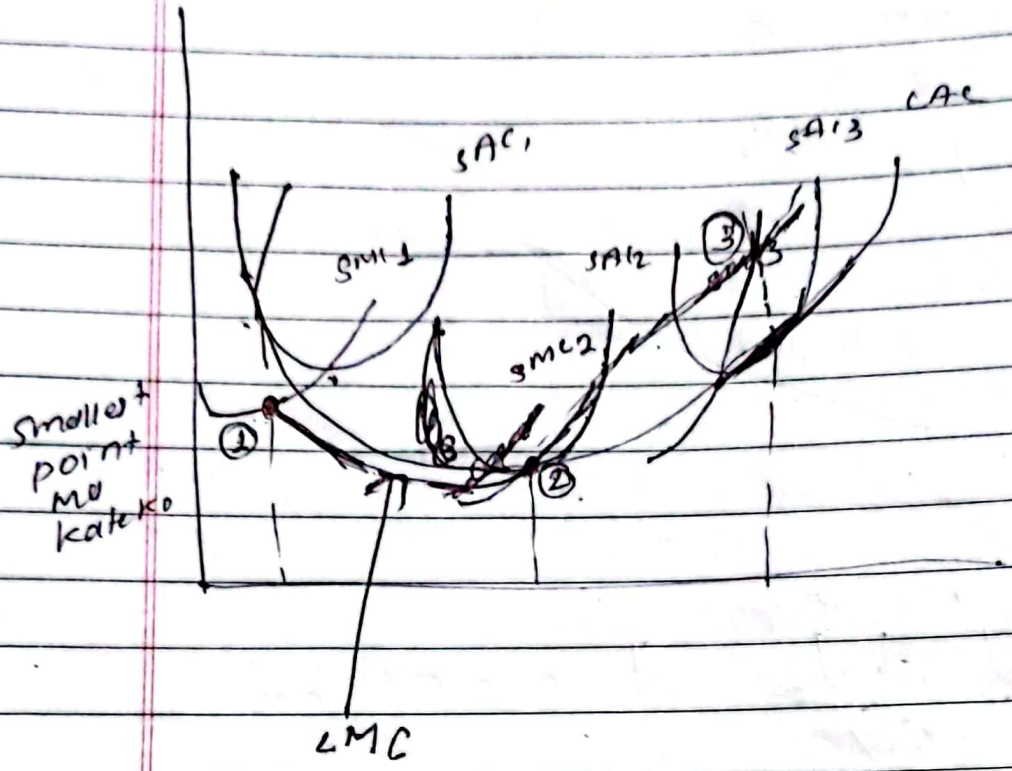




If producer produces upto 20, she will use first plant which is represented by SAC



Derivation of LAC from SAC



steps

1. Derive LAC curve from SACs
2. Draw perpendicular line to x-axis from tangent point of SACs & LAC
3. Draw all respective SMCs & find out the interaction point of SMCs & perpendicular.
4. Join the all intersection point & we can find LMC as U-shaped.

total sales x price

Revenue Curve

Revenue function :- Revenue function shows the functional relationship between total revenue and its determinate. $TR = f(P \cdot Q)$

TR = Total Revenue is the total money Receipts from sales of the total product at given period of time.

TR is also obtain by product (Multiplied) of price & quantity of product

i.e. $TR = P \times Q$

Where P = price

Q = Quantity

TR → Total Revenue

P → price of product

Q → Quantity of product

AV = per unit Revenue

$AV = \frac{TR}{Q}$

MR = It is the additional Revenue that is received from one additional unit sales of product → MR is the total change in total Revenue due to one additional unit change in commodities.

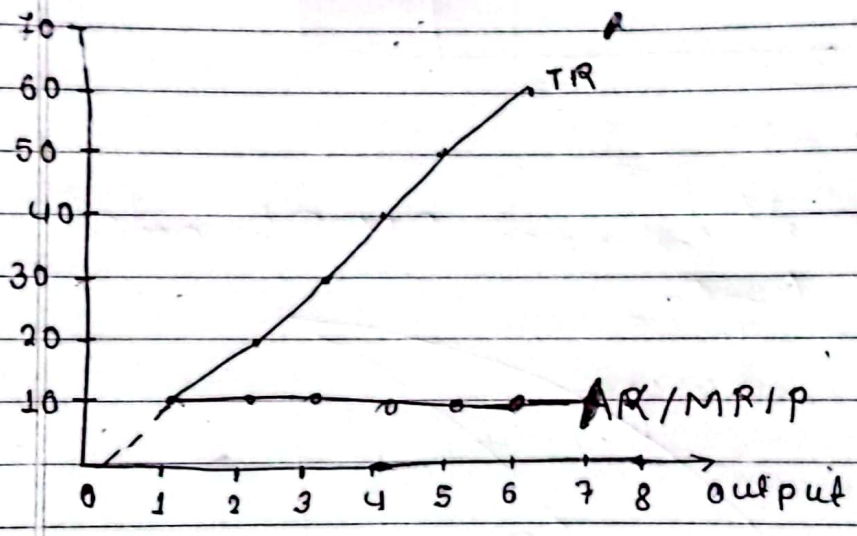
i.e $MR = TR_n - TR_{n-1}$

i.e $MR = \frac{\Delta TR}{\Delta Q}$

Revenue in perfect competition market

Price	Quantity	TR	AR	MR (TRn − TRn−1)
10	1	10	10/1 = 10	10
10	2	20	20/2 = 10	20−10 = 10
10	3	30	10	30−20 = 10
10	4	40	10	10
10	5	50	10	10
10	6	60	10	10

perfect mkt price same



Which one is true in perfect competition Market structure regarding cost Relationship

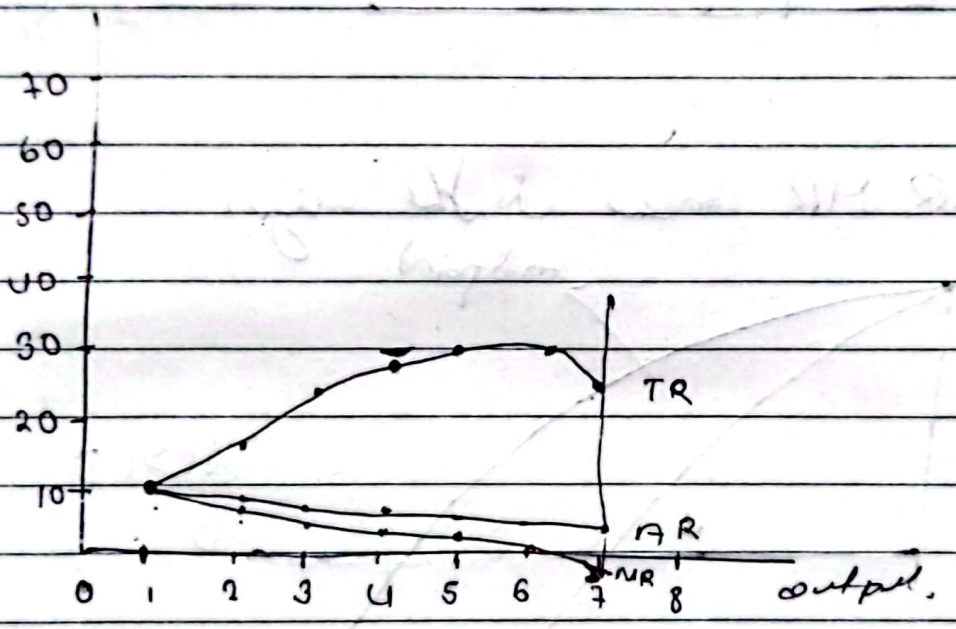
a) IR = AR (b) AR = MR

c. IR = P d. true above all

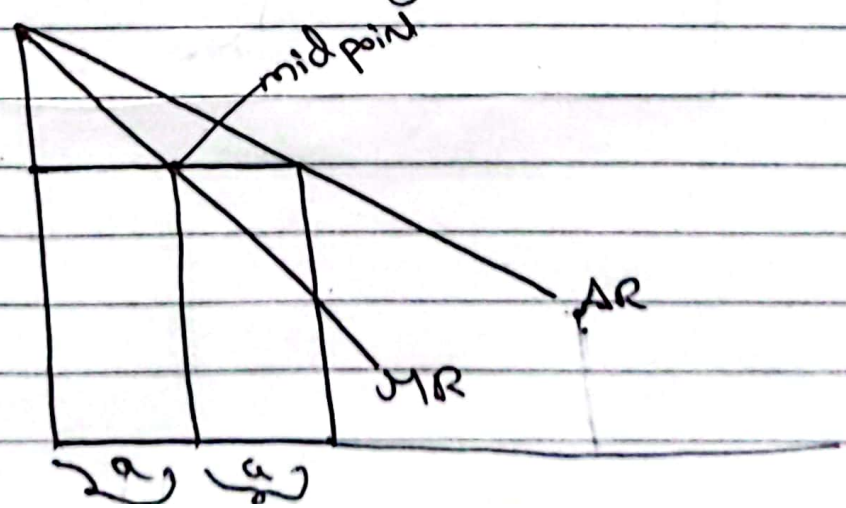
Revenue in Perfect Competition Market.

Price	Quantity	TR	AR	MR = TRn - TRn-1
10	1	10	10	-
9	2	18	9	8
8	3	24	8	6
7	4	28	7	4
6	5	30	6	2
5	6	30	5	0
4	7	28	4	-2

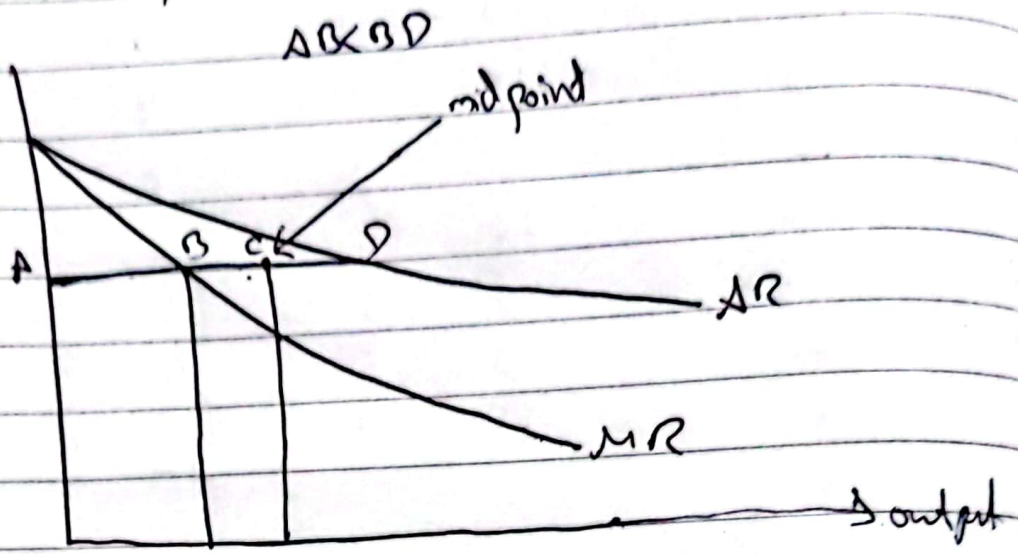
(Price remains constant, quantity increases)



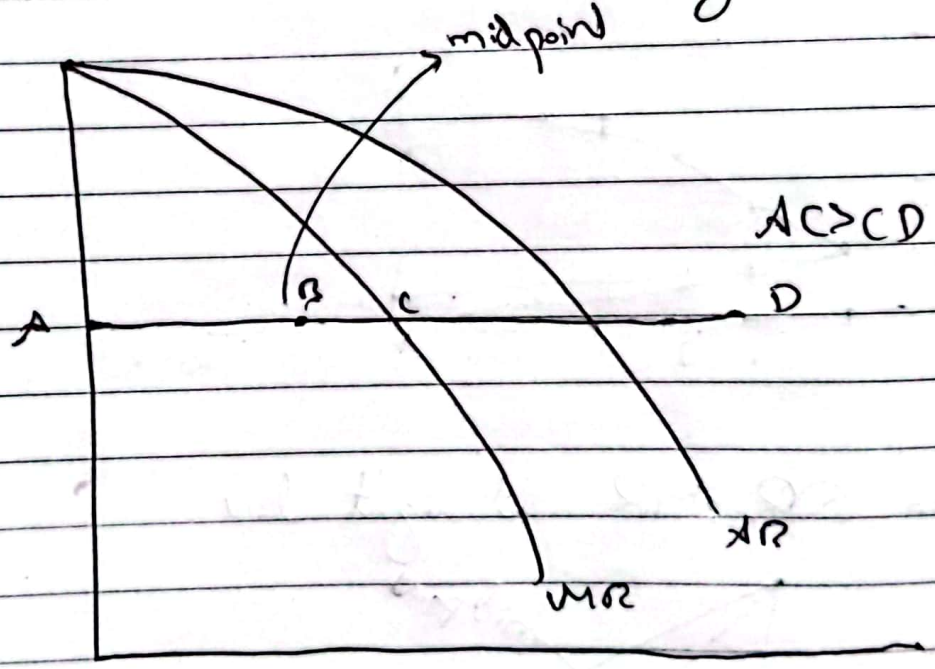
When AR, MR straight line



When AR, MR convex to the origin

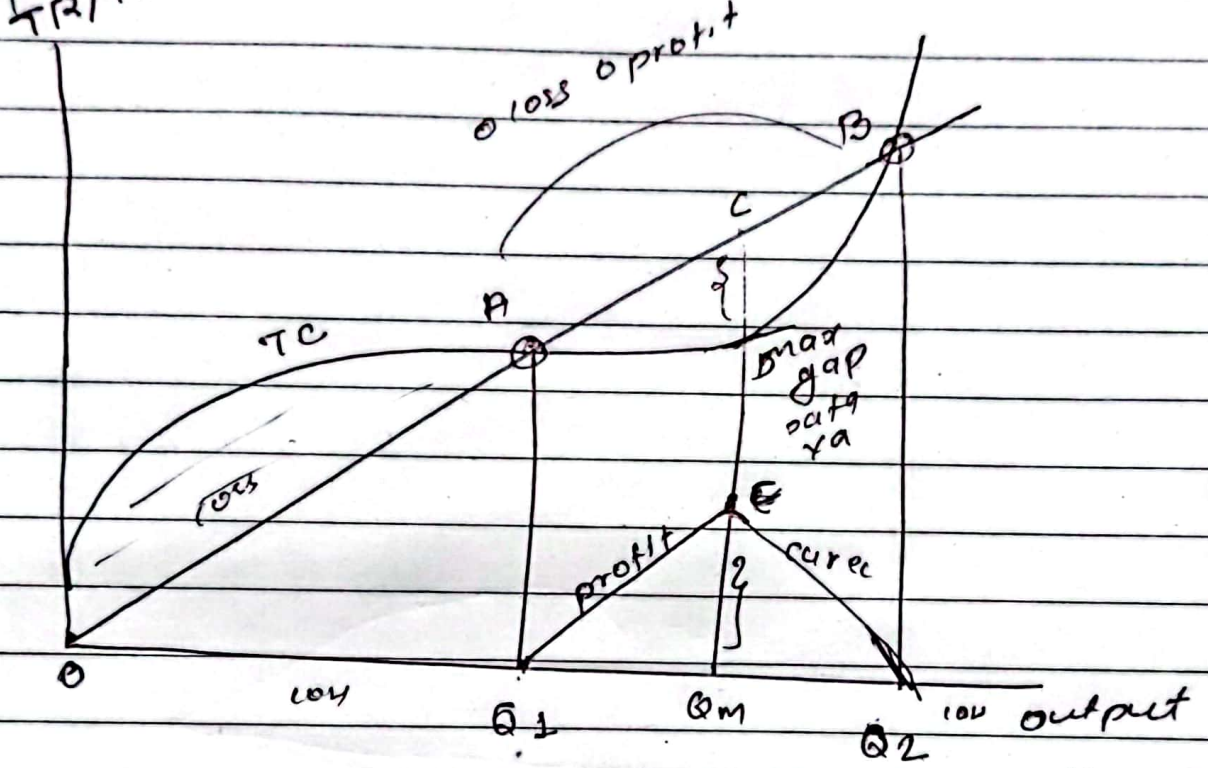


When AR, MR concave to the origin



Perfect Competition Market

It is that Market structure in which there are very large no. of buyers & sellers of a homogenous product.



Firm will not produce less than OQ_1 & more than OQ_2

fig: profit curve