

12/4/2022  
Monday  
Tuesday

## Module - I

### Basic or fundamental central problems of the economy

1. what to produce?
2. How to produce?
3. Whom to produce?

Types

- 1) Capital goods.
- 2) Consumer goods.

1. what to produce?

This is related to the problems of production of goods.

An economy will choose whether to produce consumer goods or capital goods.

2. How to produce?

- This problem is related to production techniques.
- An economy has to decide on which types of techniques (capital intensive or labour intensive) to be used.
- Selecting techniques of production depends on the availability of factors.

3. Whom to produce?

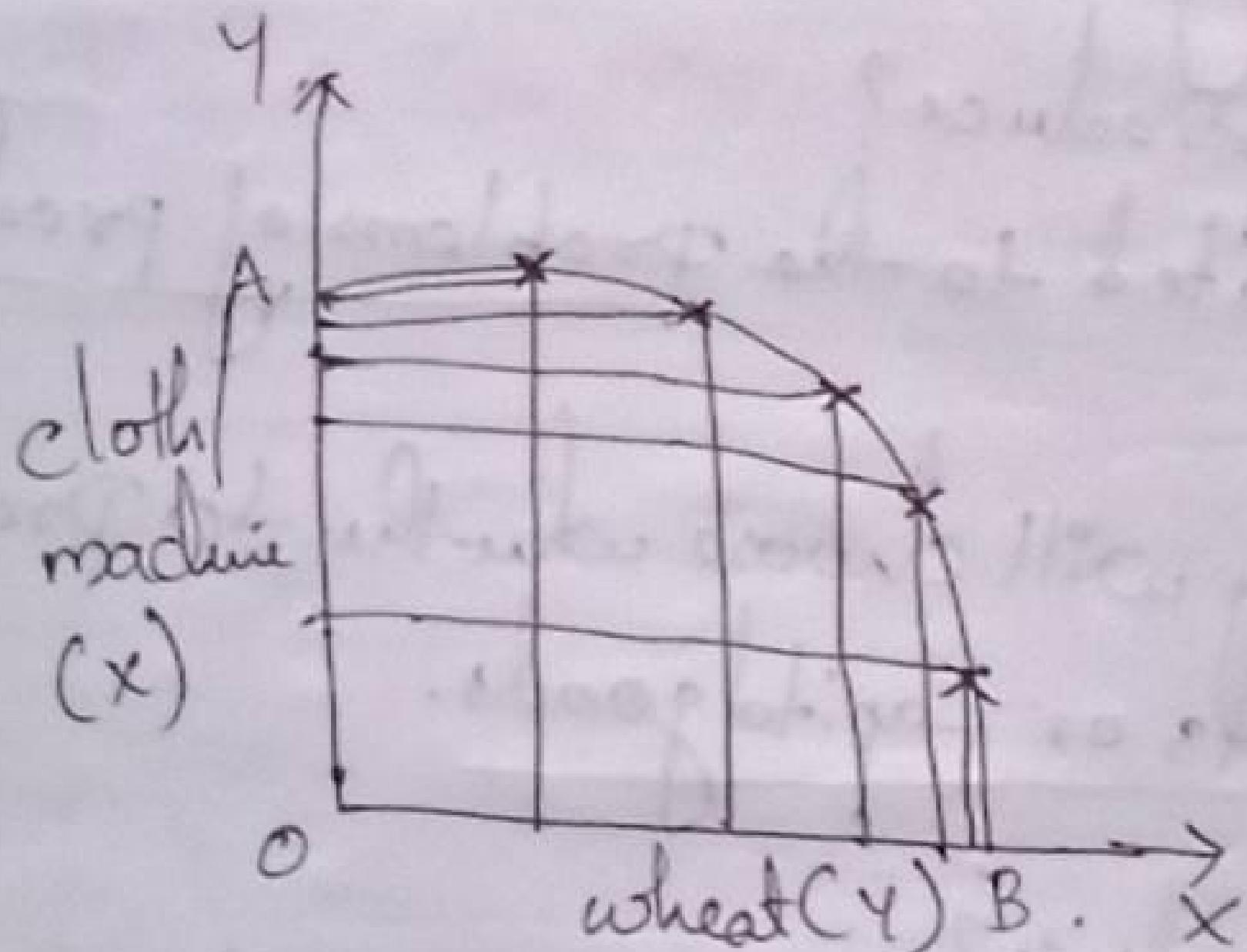
- This problem is related to distribution.

• In capitalism, distribution of goods to the people based on the ability to pay (those who are able to pay) principle.

• In socialism, distribution takes place on the welfare consideration.

Production possibility curve (PPC) / Prod<sup>n</sup> poss.  
frontier

It shows different possible combinations of two commodities that can be produced with the limited availability of resources.



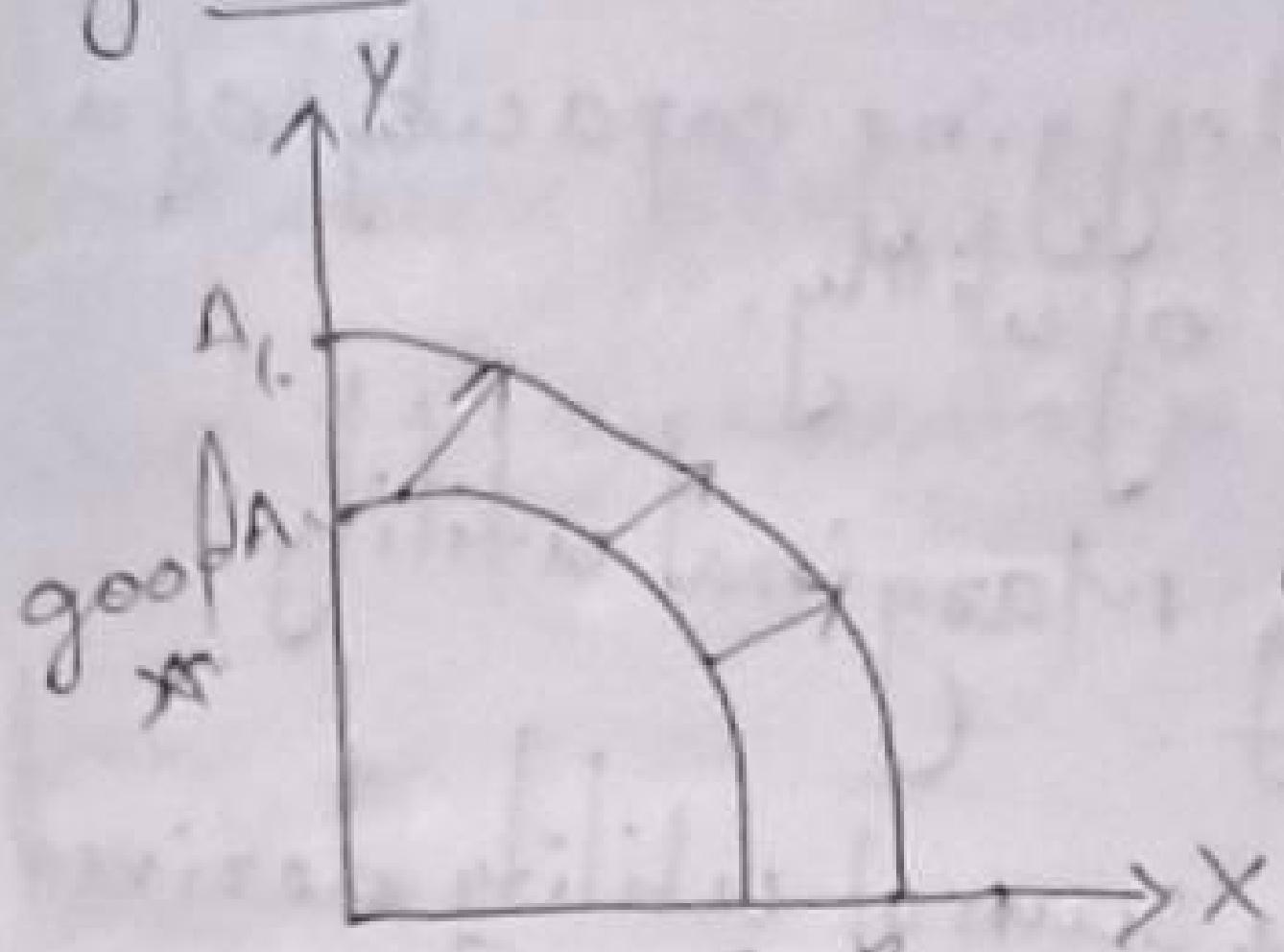
Assumptions

- Two commodities are produced.
- Two factors are used.
- Limited availability of resource.
- Technology remains constant.

Shift in PPC

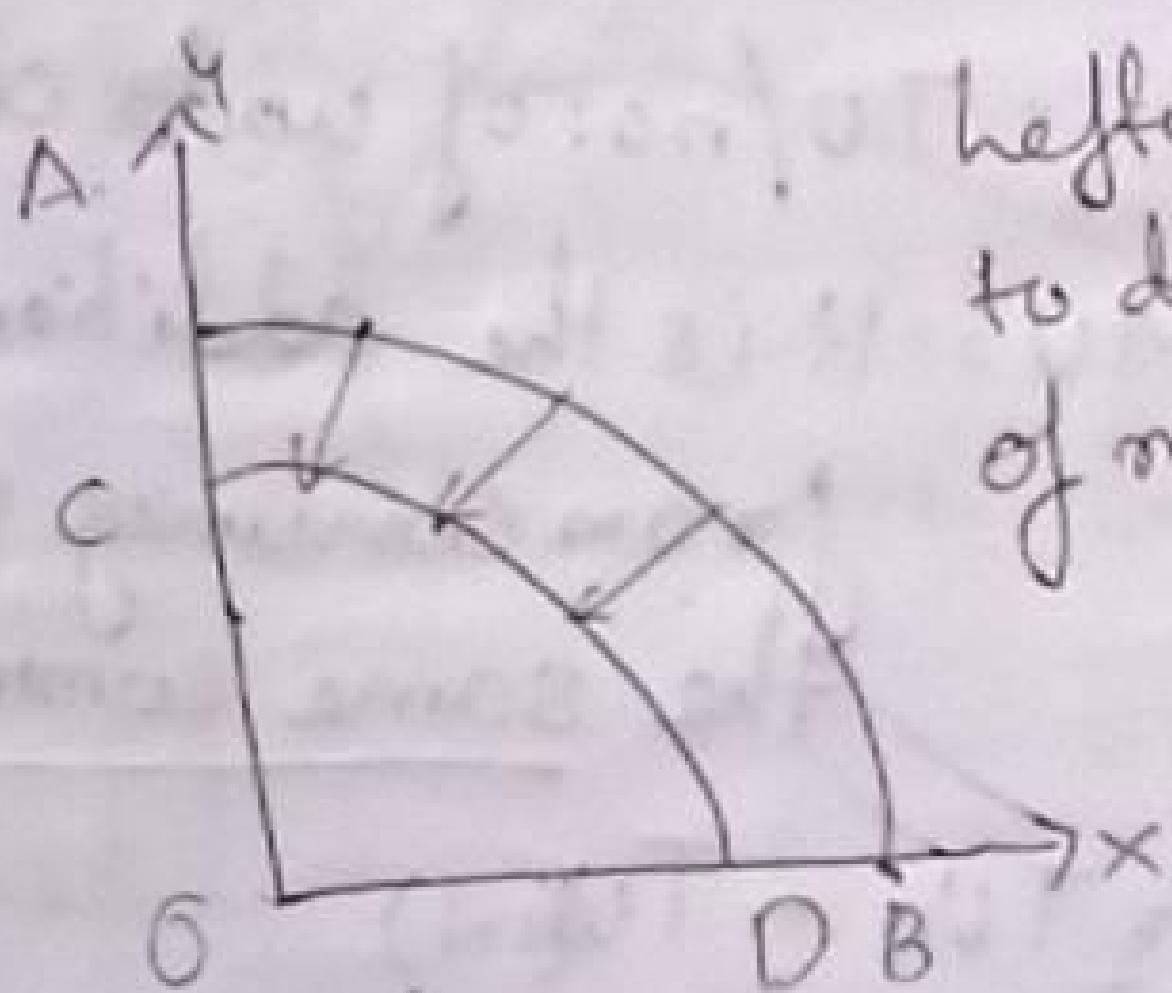
- 1) Upward shift (rightward shift)
- 2) Downward shift (leftward shift)

## Rightward shift



Rightward shift in PPC is good due to increase in the availability of resources

## Leftward shift

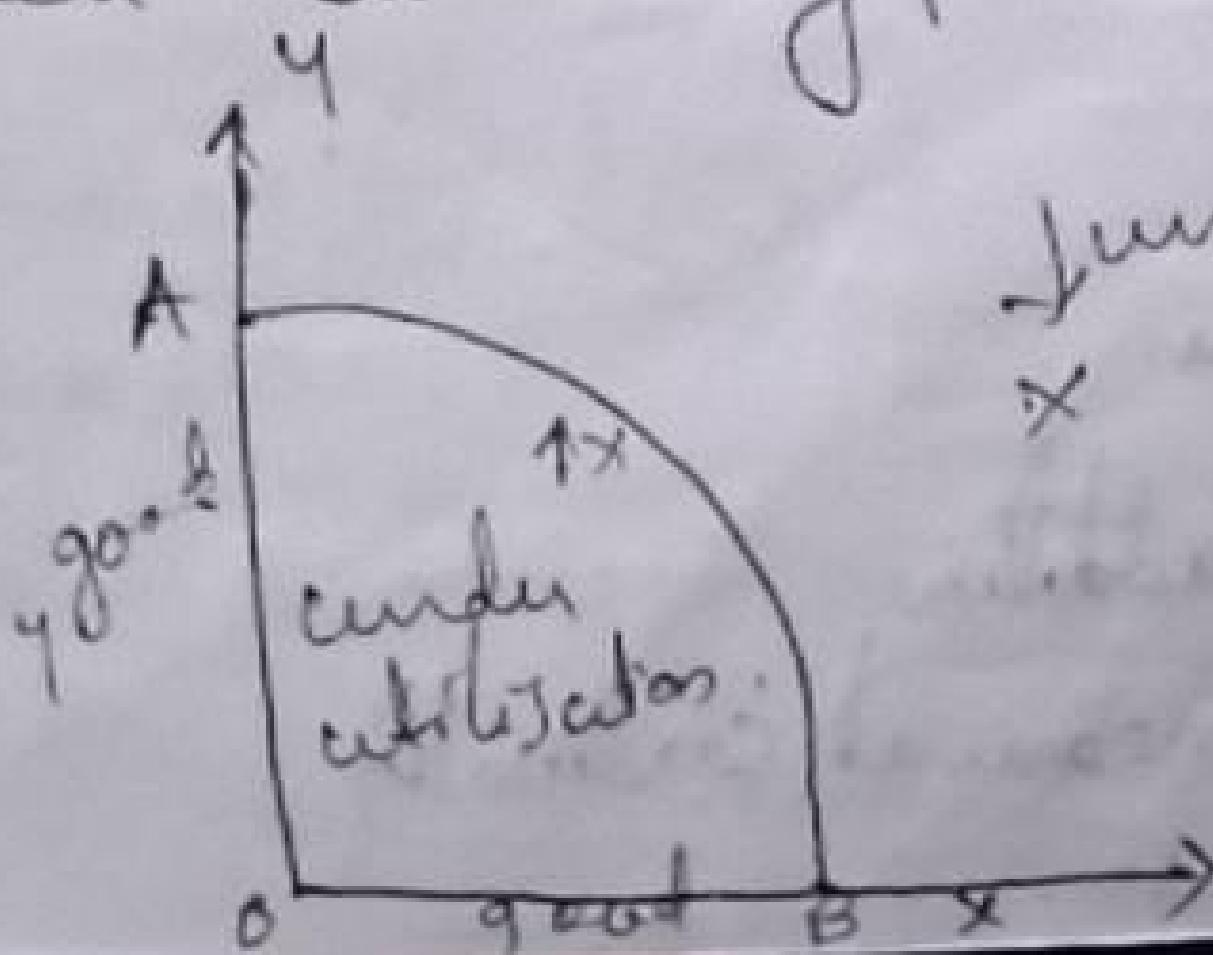


Leftward shift in PPC is due to decrease in the availability of resources

## under-utilization and unattainable levels

### under-utilization

under-utilization occurs when resources are not used properly (wastage). unattainable level is where the economy is unable to reach that level of production due to resource constraints.



unattainable level

## 13/2/22 Tuesday Utility

It is the wants satisfying capacity of a commodity.

- Unit is the unit of utility.

law of diminishing Marginal utility

Total utility: It is the sum of utility derived from the consumption of different units of the same commodity.

$$TU = \Sigma (U_1 + U_2 + U_3 + U_4 + \dots)$$

Average utility, AU = TU/no. of units consumed.

Marginal utility, MU = It is the additional utility derived from consuming different units of the same commodity.

$$MU_n = TU_n - TU_{(n-1)}$$

- It states that when we consume different units of same commodity, satisfaction or utility goes on diminishing.
- According to this law, utility can be negative.

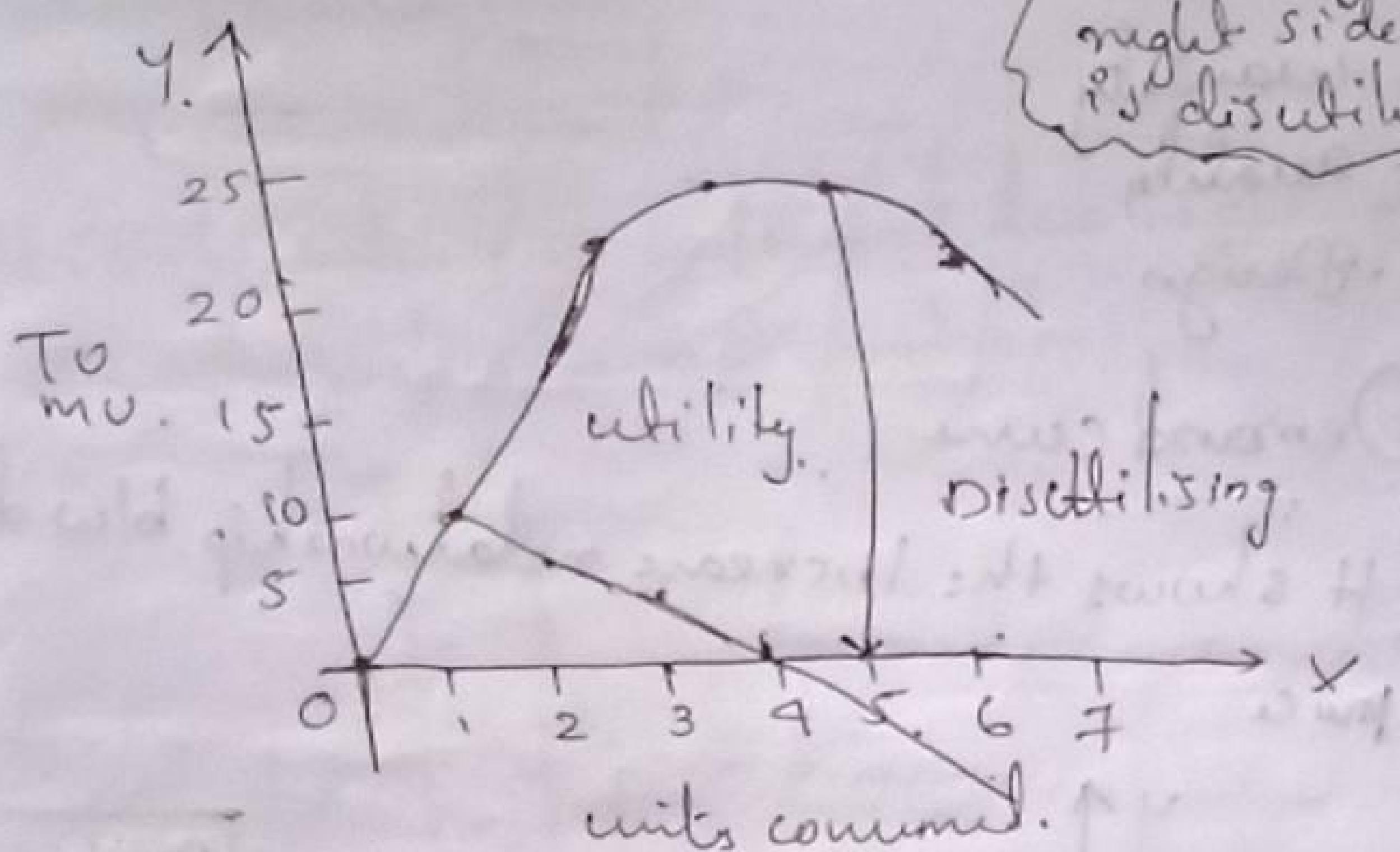
Apple	TU	MU
1	10	10
2	18	8
3	23	5
4	25	2
5	25	0
6	24	-1
7	22	-2

Assumptions

- Utility is additive
- Utility is measured cardinally

- There should not be any time gap between consumption of units.
- Consumers income remains constant.

Graphical representation



18/4/22  
Monday Demand

- Desire
- Ability to pay.
- Willingness to pay

Facts  
Demand is the desire backed by ability and willingness to pay for a commodity.

Factors determining demand.

Demand function.

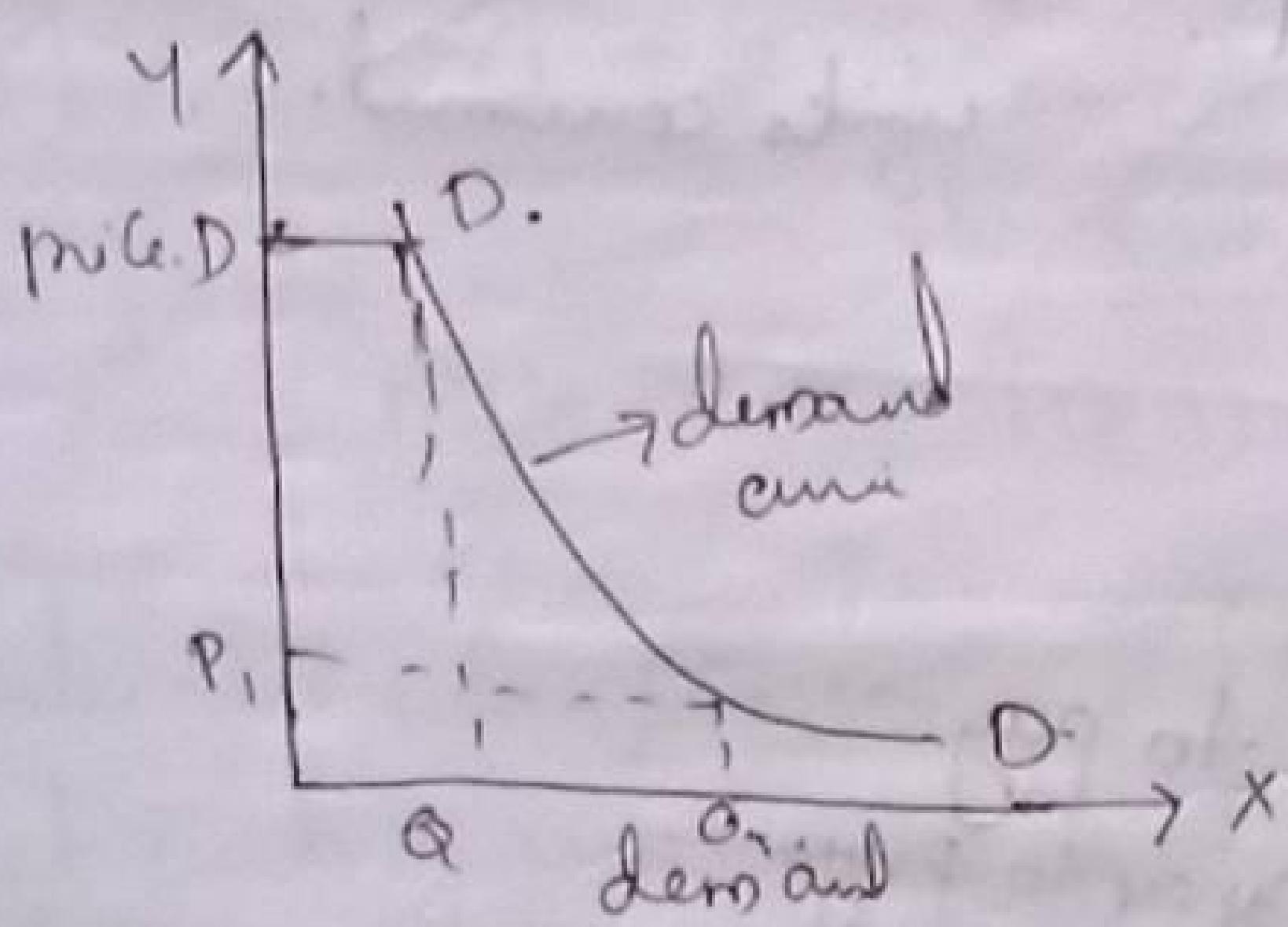
It is the functional relationship b/w demand and its determinants.

$$D = f(P, Y, T, C, \text{Quality}, \dots)$$

- Price - P
- Income - Y
- Taste and preference - T
- Climate - C
- quantity.
- quality
- Design

### Demand curve

It shows the Inverse relationship b/w demand & price



Price	Demand
25	5
30	3
40	1
50	0

When price ~~remain~~ quantity demanded falls. On the other hand, when price falls quantity demanded rises.  
Change in Demand

1) Extent of contraction in Demand.

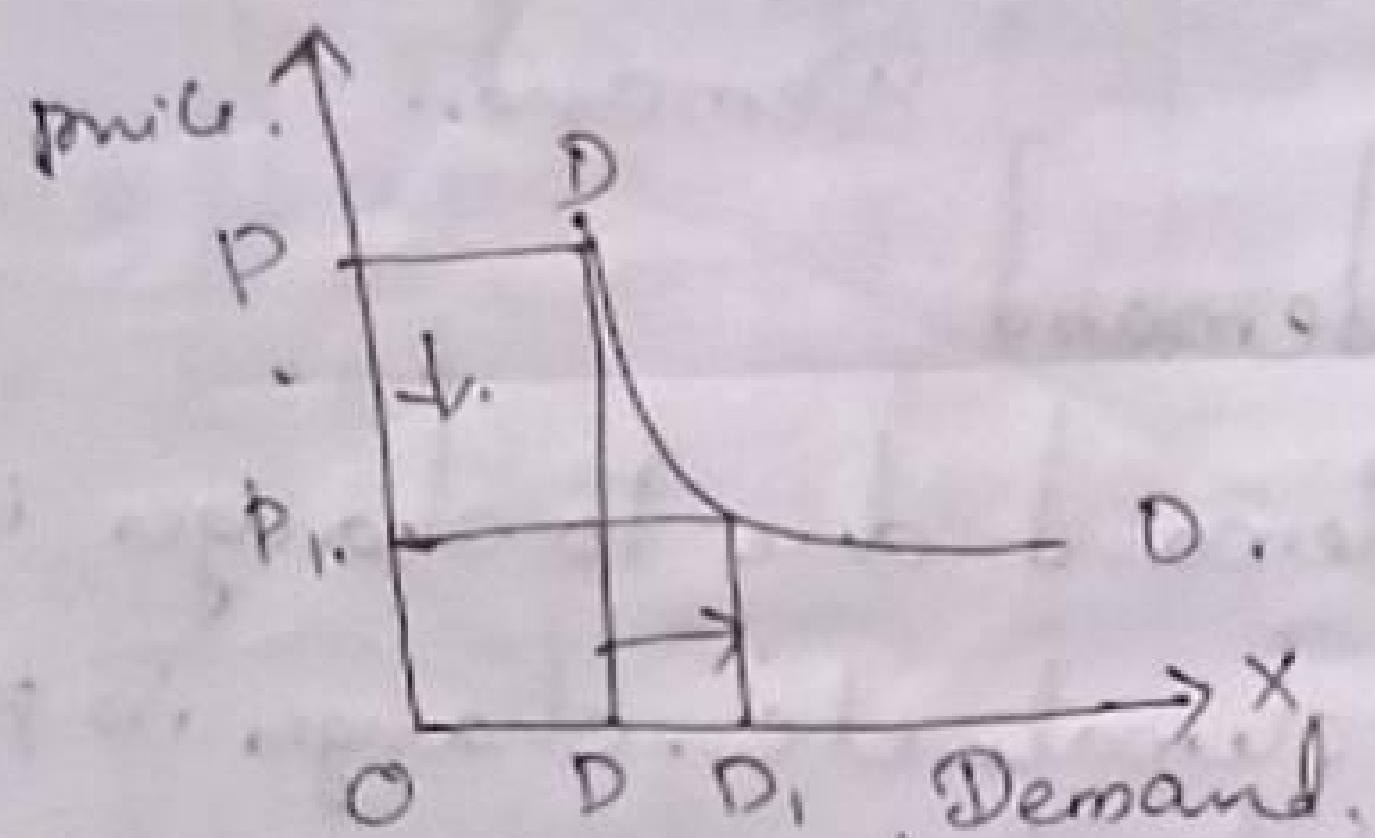
2) Increase or decrease in demand.

## 1) Extension or contraction in demand

Extension or contraction in demand is the change in demand due to change in price alone. All other factors that affect demand remain constant.

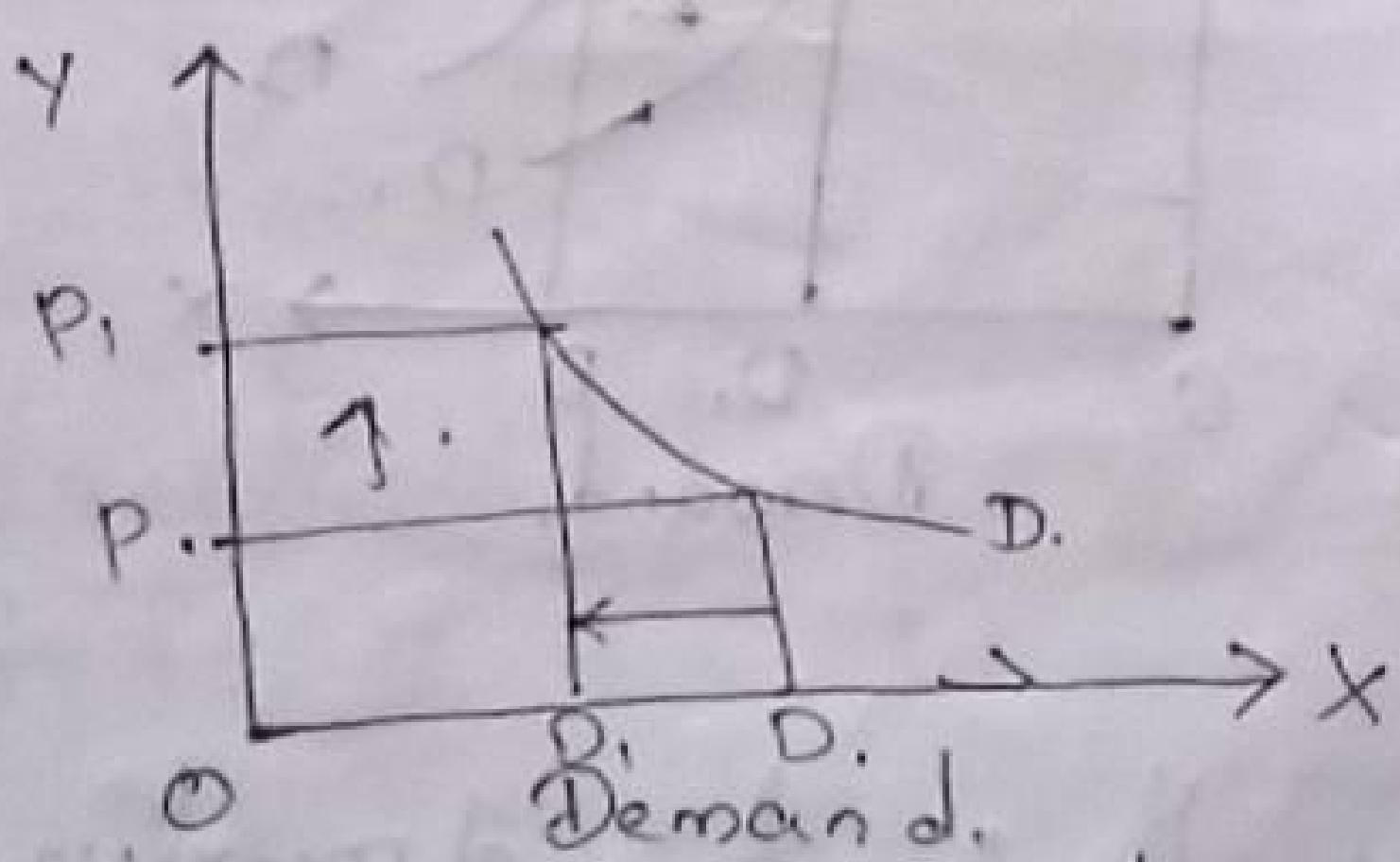
### Extension in demand

It is the ratio rise in demand due to change in price alone. Other factors remain constant.



### Contraction in Demand

It is the fall in demand, due to change in price. Other factors remain the same.



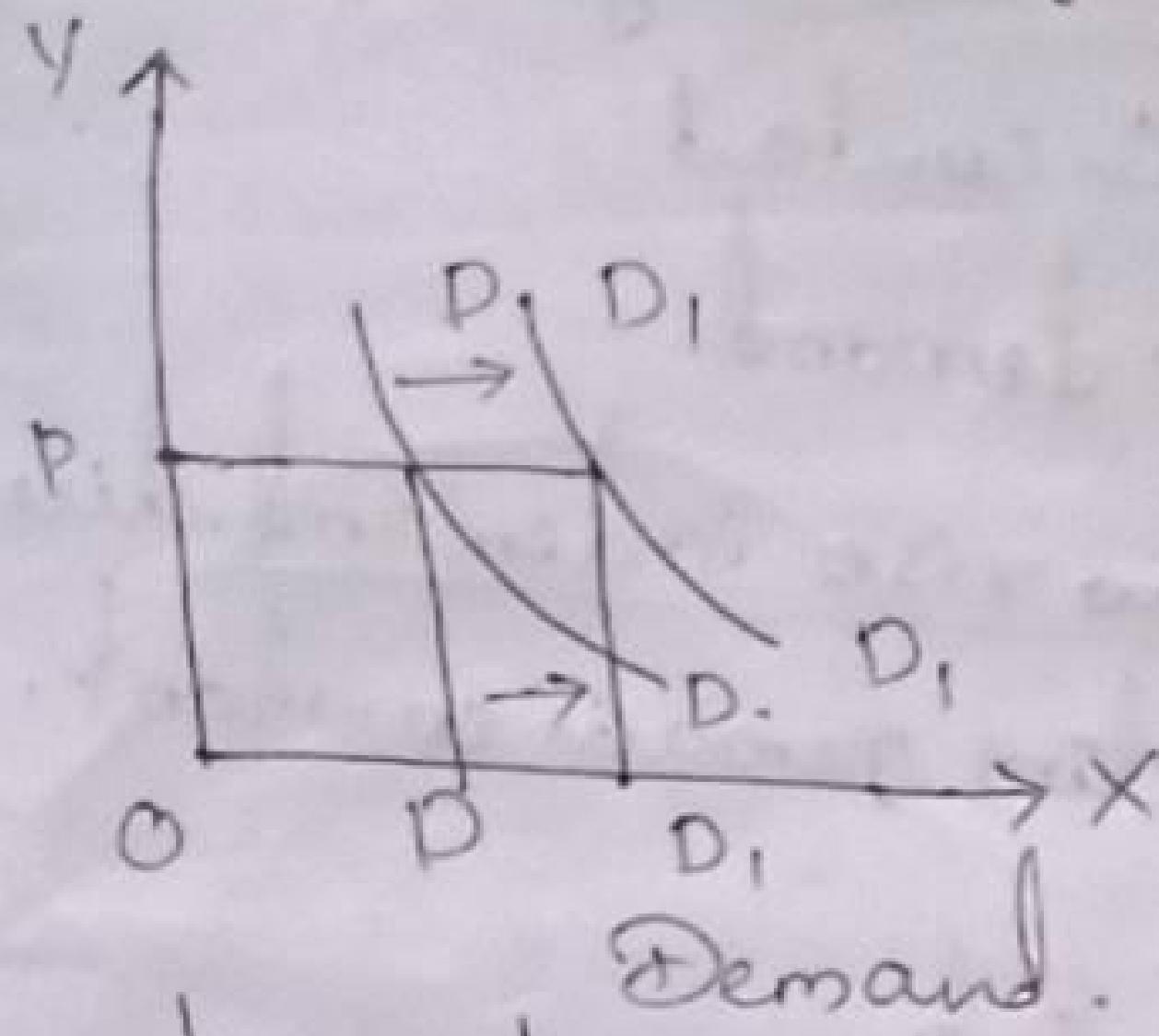
### Increase or decrease in demand

Increase or decrease in demand is the change in demand due to factors other than price, price remains

Constant

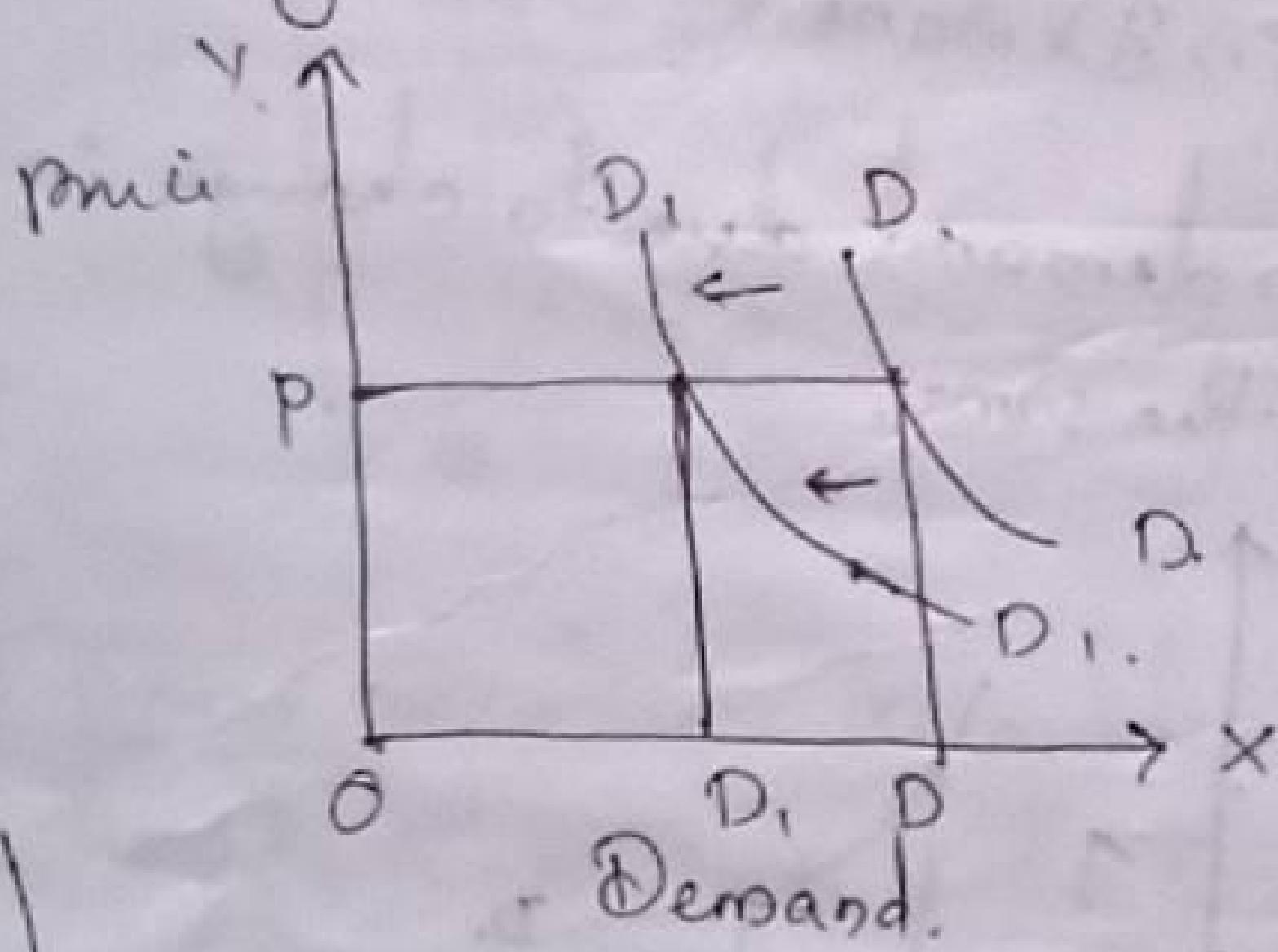
Increase in demand

It is the rise in demand due to changes in factors such as income, taste, climate etc. change in price remains neglected.



Decrease in demand

It is the fall in demand due to changes in factors such as income, taste, climate etc. change in price remains constant neglected.



Supply

Supply is the function of producer.

It provides goods and services in the market.

law of supply

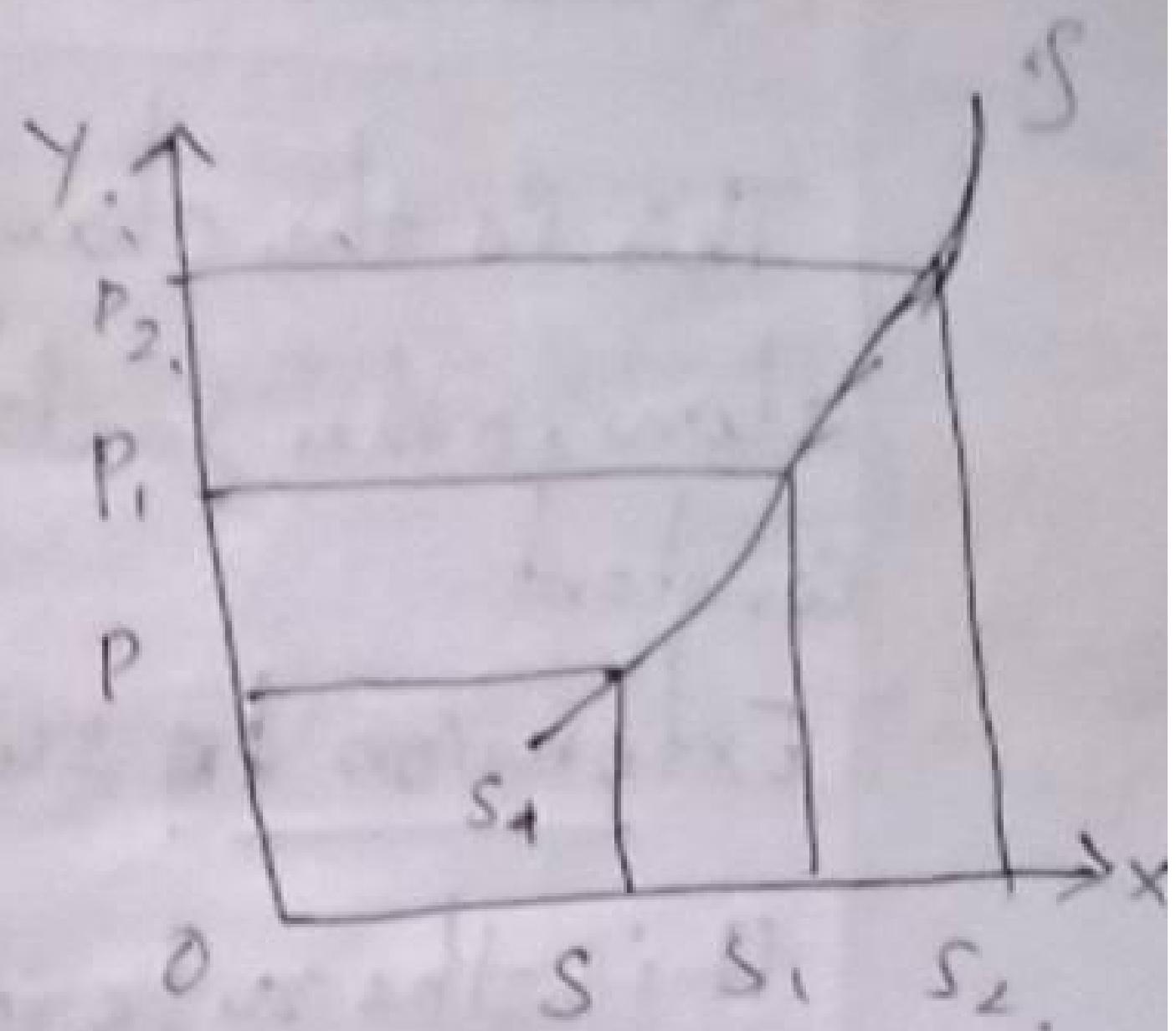
It states that there exist a positive or direct relation

blw price and supply.  
when price rises supply also rises price falls,  
supply also falls.

Supply curve

Supply schedule

Price	Schedule
25	500
35	750
50	1000
80	1500
100	2000



Factors affecting supply

- Price
- Availability of factors.
- price for factors (cost of prodn).
- climate
- govt. policies.

Supply function

Functional relationship blw supply and its determinants.

$$S = f(P, \alpha, C, CL, GOV)$$

P - price

$\alpha$  - Availability of factors.

C - cost of production.

CL - climate

GOV - govt. policies.

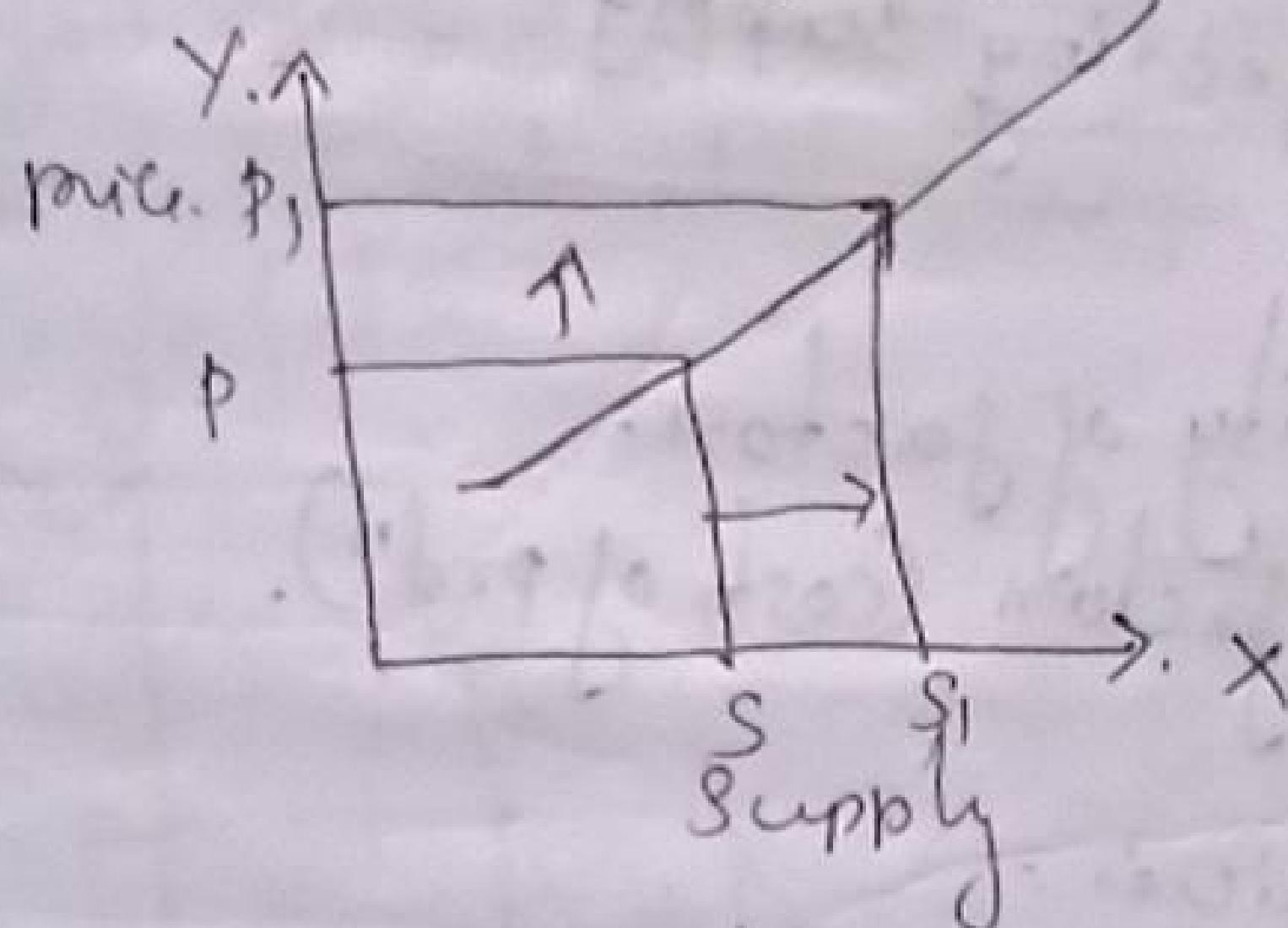
## Changes in supply

1. Extension or contraction in supply.
2. Increase or decrease in supply.
3. Extension or contraction in supply

This is the change in supply due to changes in price alone, other factors that determine supply remain constant.

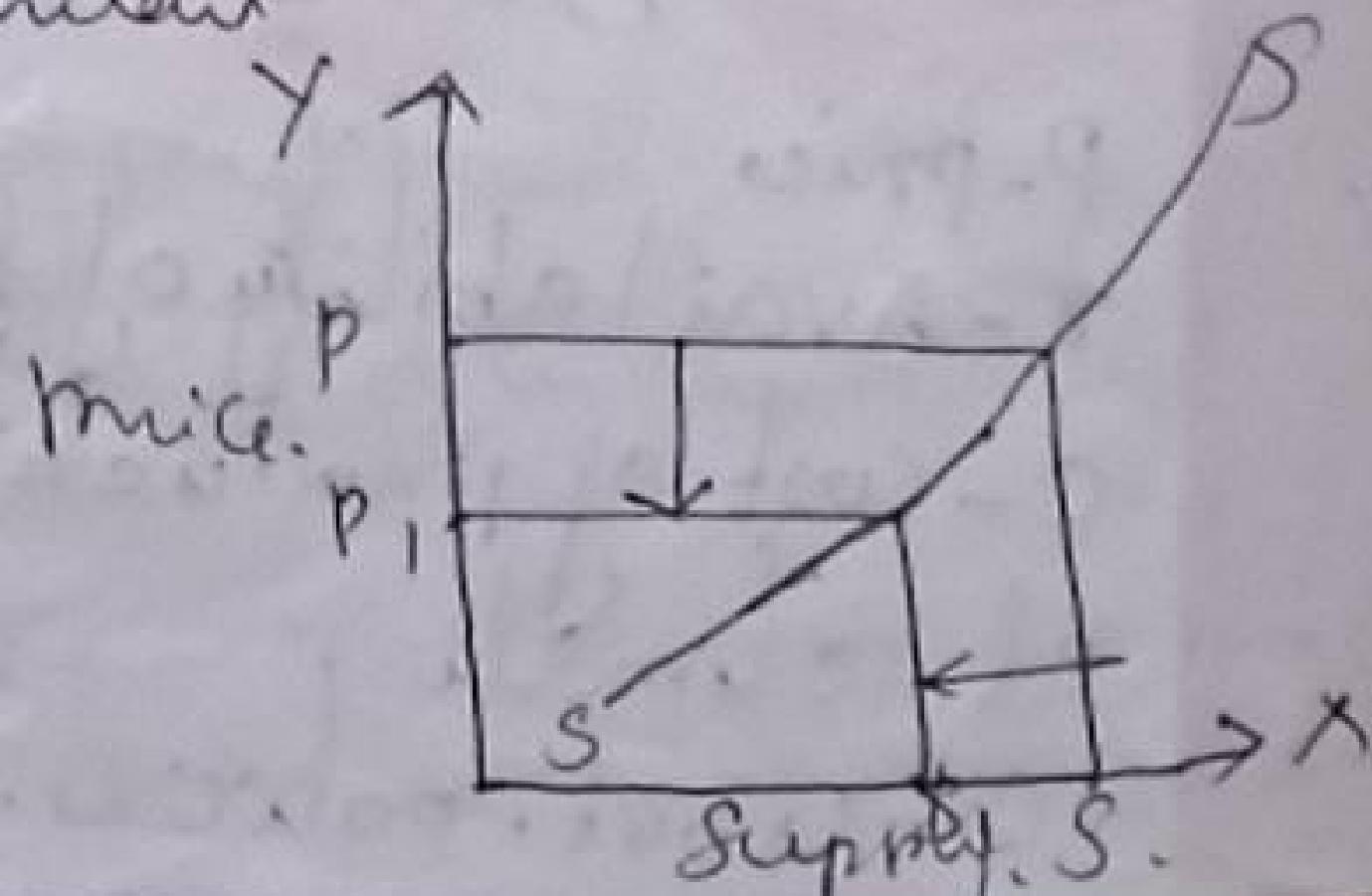
### Extension in supply

It is the rise in supply due to change in price alone, other factors remain constant.



### Contraction in supply

It is the fall in supply due to change in price decrease, other factors remain constant.

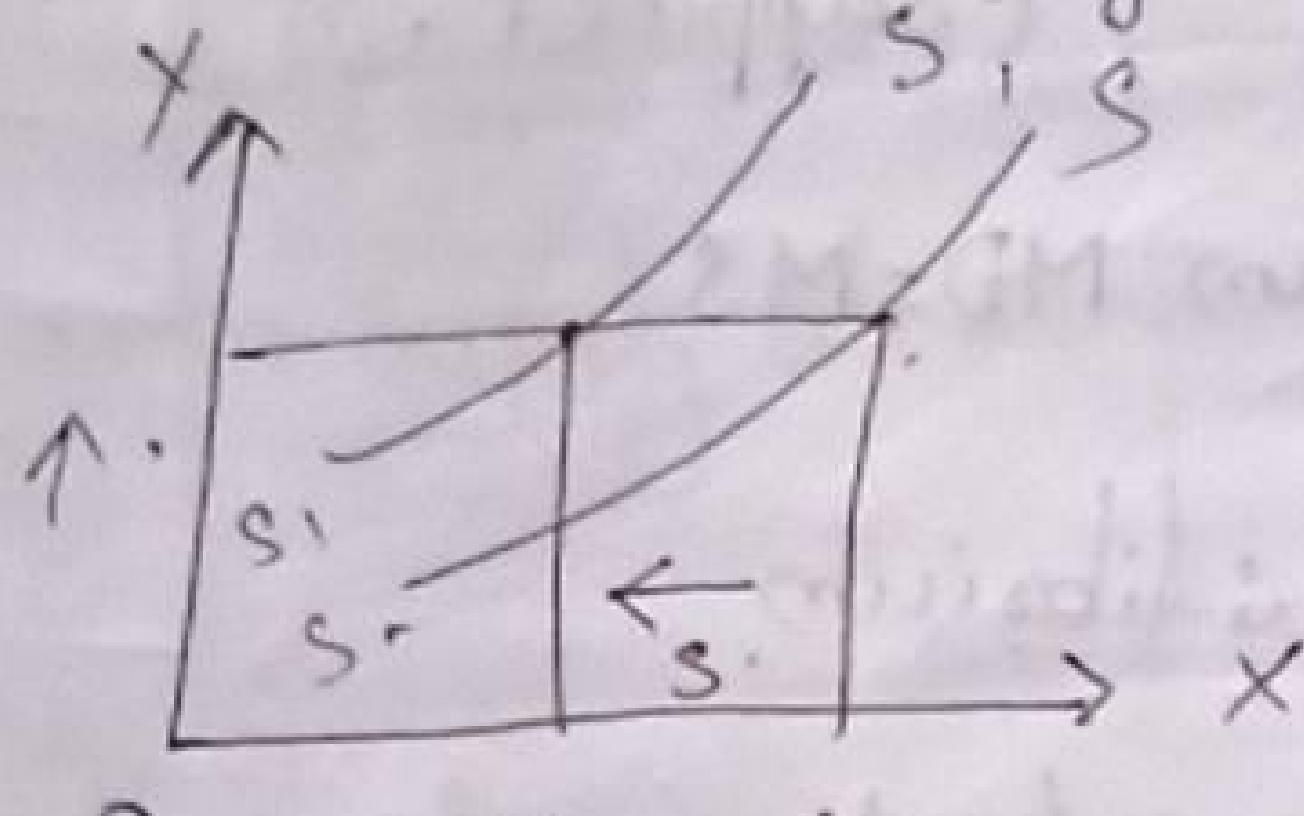


2) Increase or Decrease in demand supply.

Increase or decrease in supply is the change in supply due to change in factors other than price.  
Price remains constant

Increase in supply

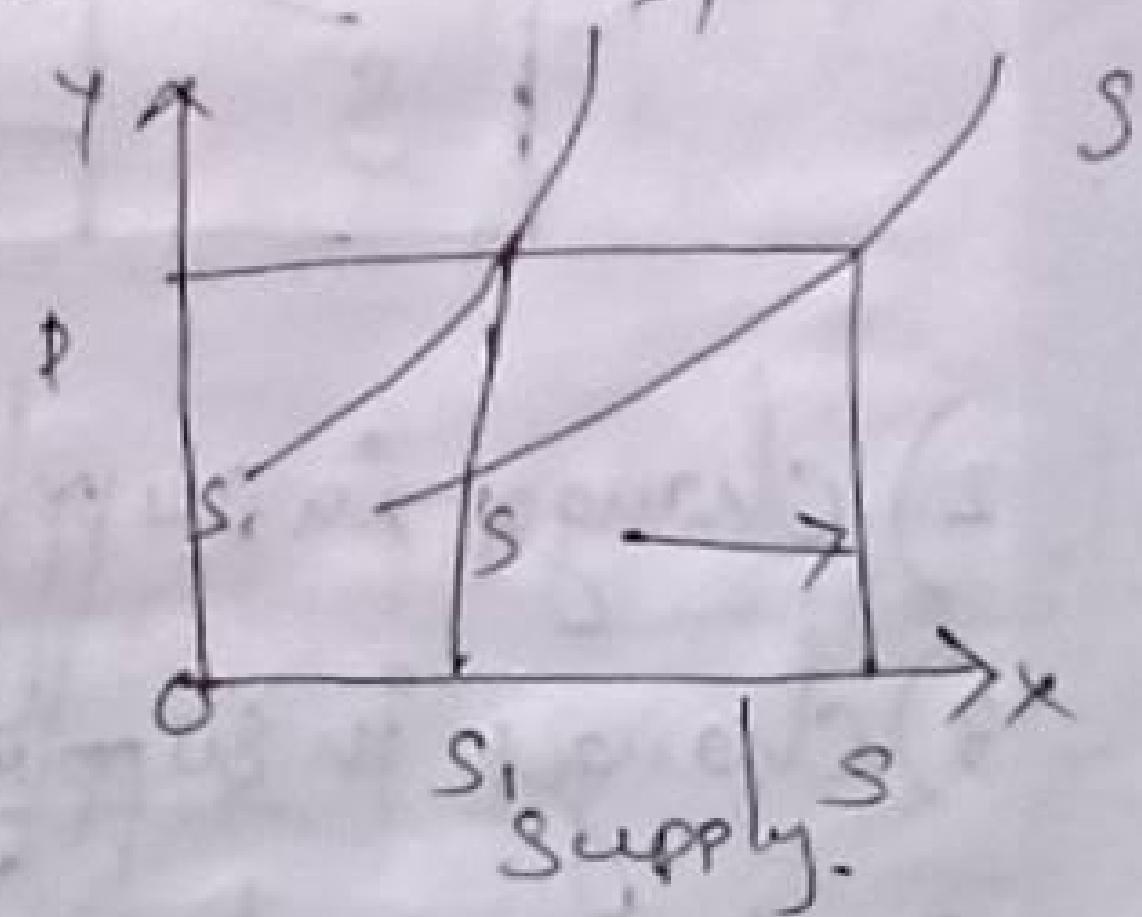
It is the rise in supply due to changes in other factors such as climate, govt. policies etc., Price remains constant



Supply.

Decrease in supply.

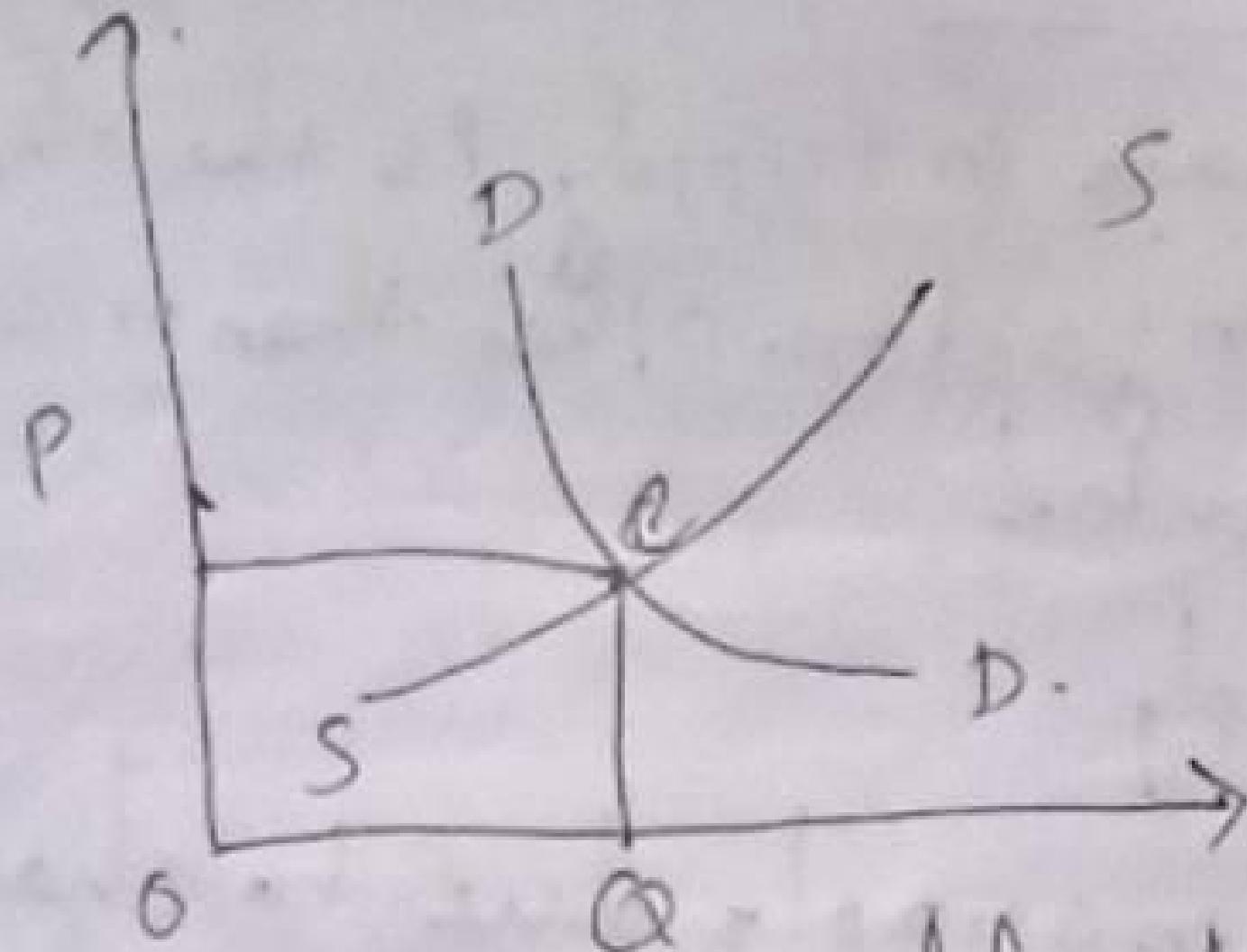
It is the fall in supply due to changes in other factors such as climate, govt. policies etc.



✓ Equilibrium

It is the state of balance.

Market equilibrium is situation in which demand & supply of a commodity are equal  $D=S$

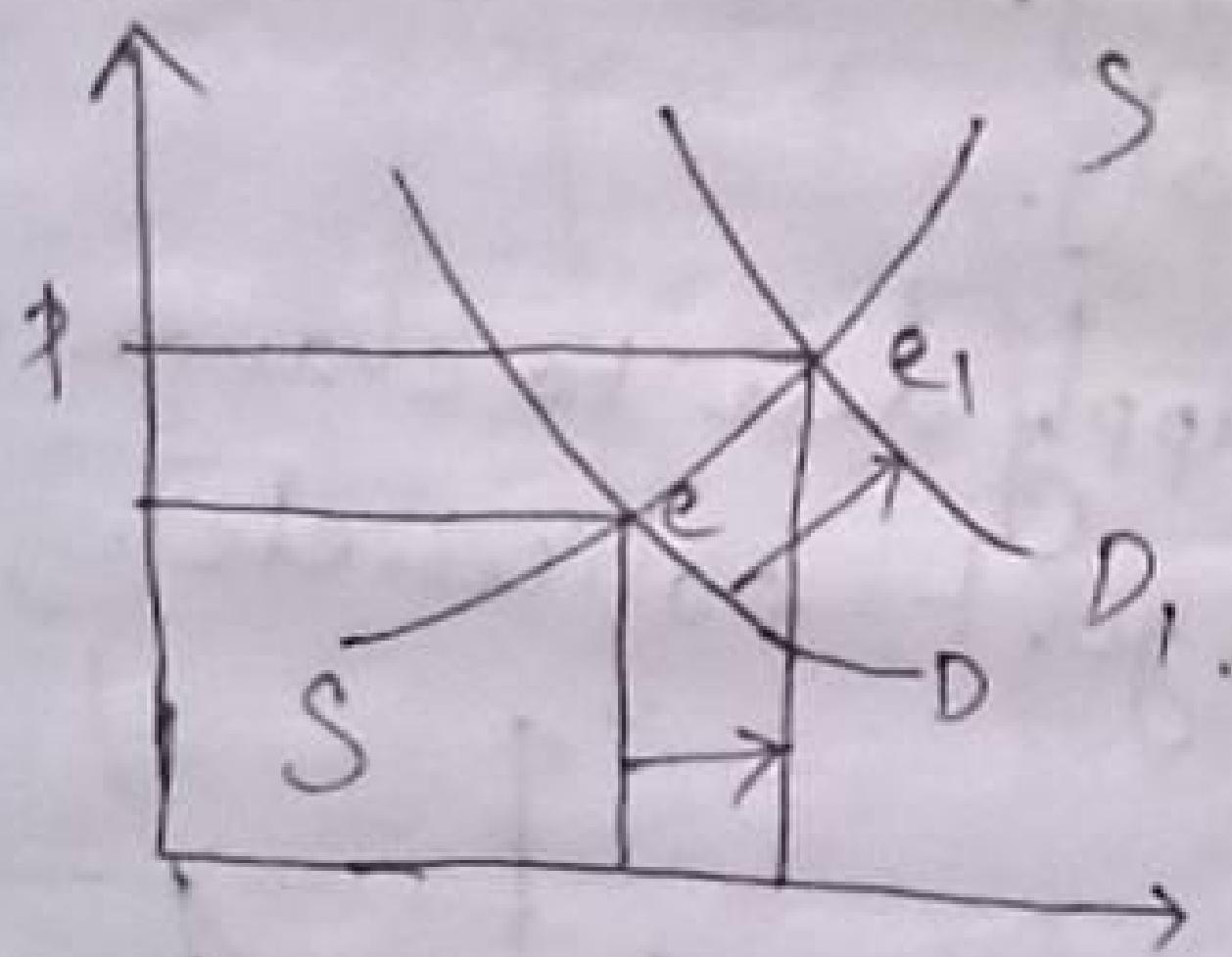


quantity demanded  
P supplied.

25/4/22  
Monday At equilibrium  $MD = MS$

Changes in equilibrium

1) change in demand alone



2) change in supply alone

3) changes in supply and demand.

1) change in demand alone

Increase in demand

When demand increases, <sup>no</sup> changes in supply, equilibrium

Position shifts to a higher position.

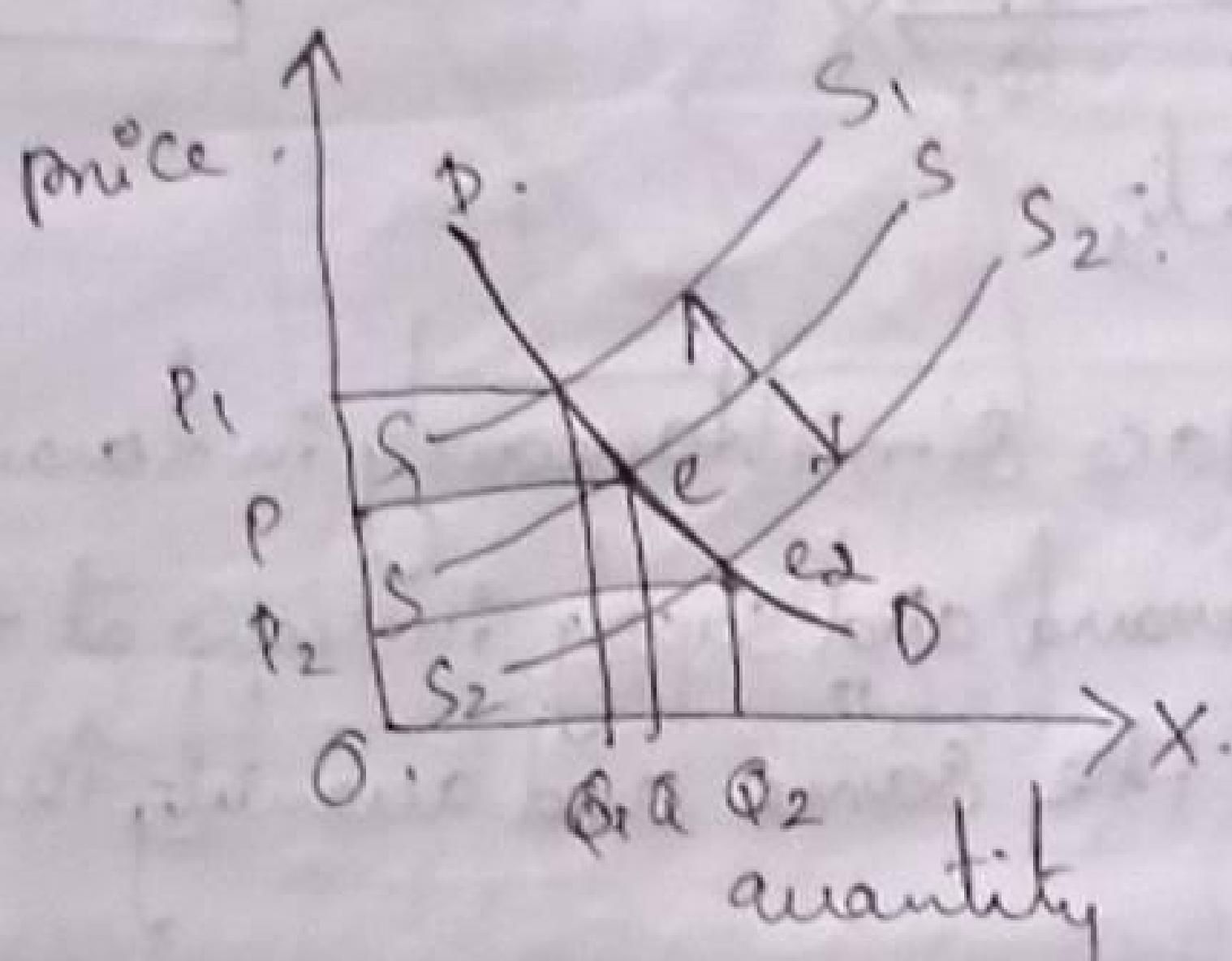
Price and supply quantity increase from the initial level.

Decrease in demand

When demand decreases, no change in supply, equilibrium position shifts to a lower position.

Price and quantity decrease from its initial position.

2) Change in supply alone



Increase in supply

When supply increases, no change in demand, equilibrium position shifts to rightward quantity.

Price falls from its initial position and quantity increases from 'OQ'.

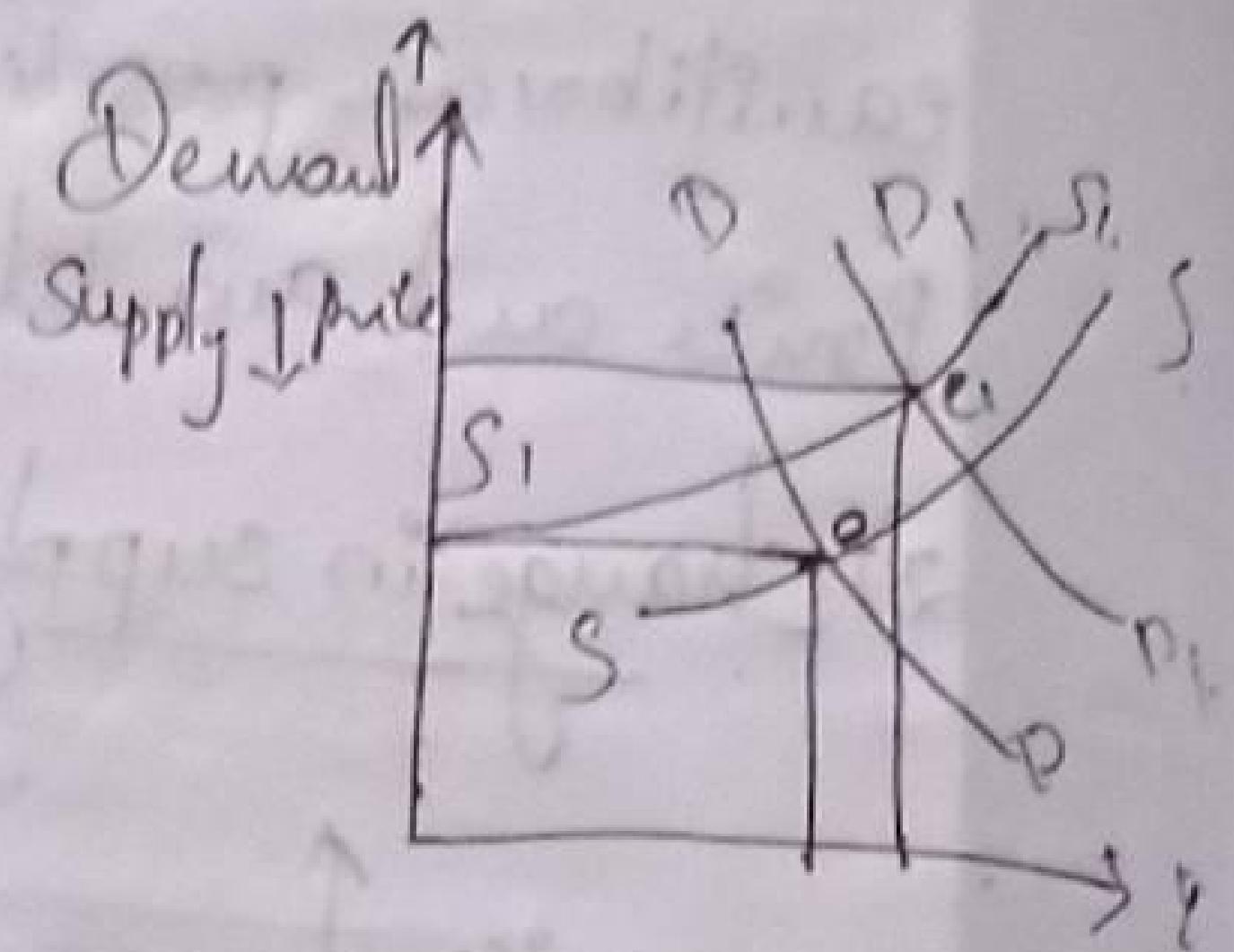
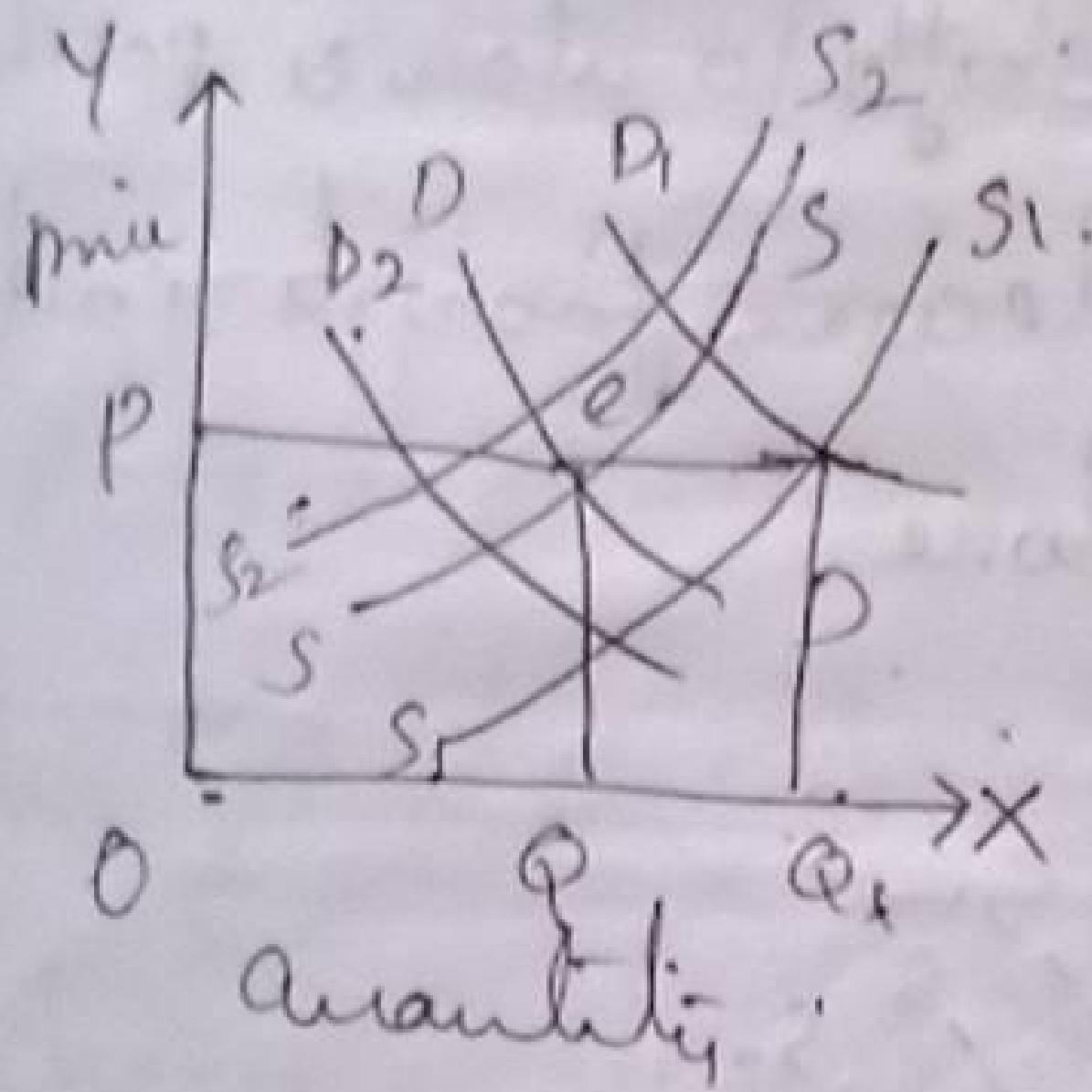
Decrease in supply

When supply decreases, no change in demand,

equilibrium position shifts to leftward  
• price rises and quantity decreases

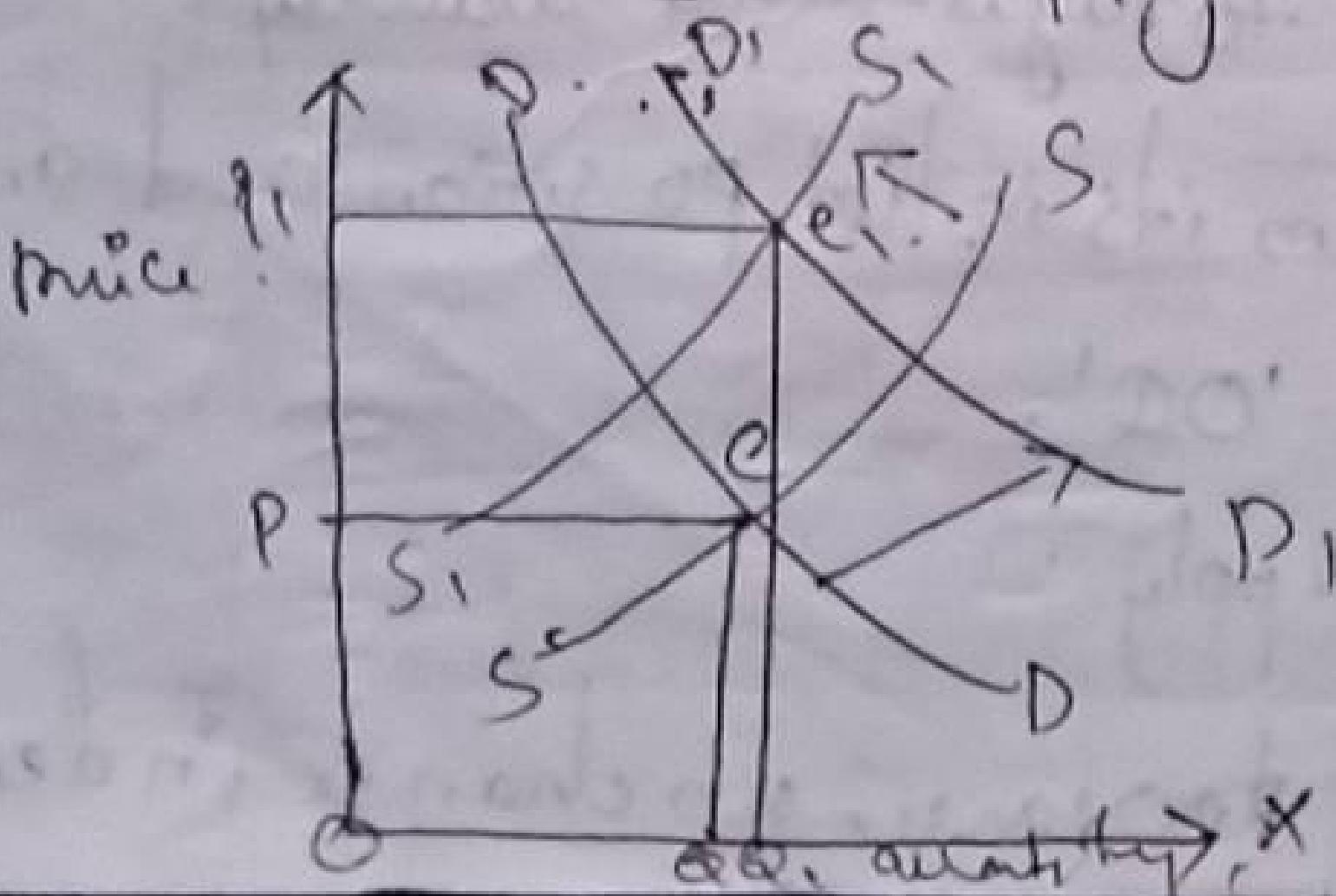
### 3) Change in both demand & supply

Simultaneous change in demand and supply.



- changes take place simultaneously in demand and supply.
- When both demand and supply increase at the same rate, price remains the same and quantity increases from its initial position
- When both decrease demand & supply decreases at the same rate, price remains the same and quantity decreases.

Demand increases and Supply decreases

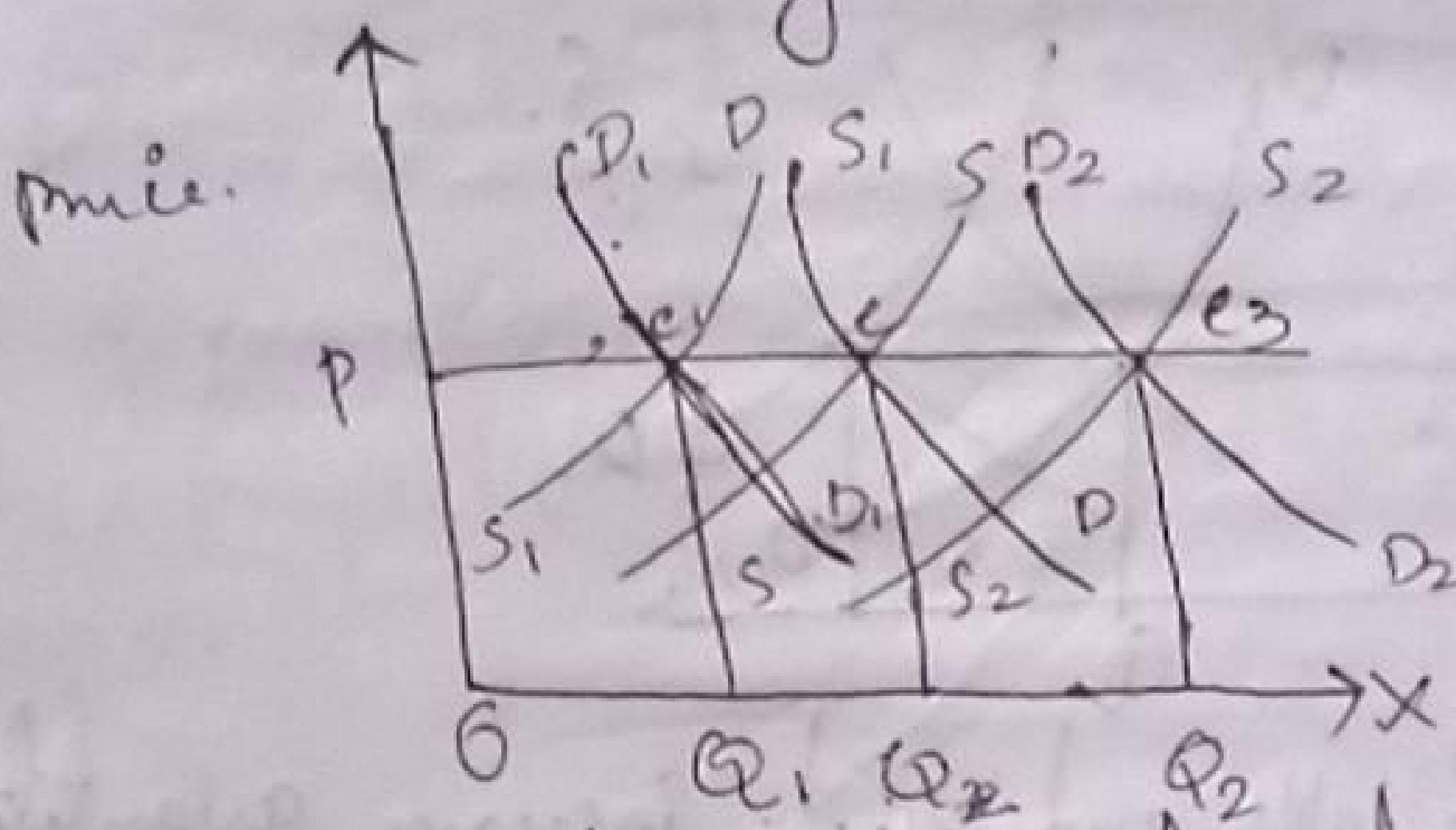


- Demand increases and supply decreases, equilibrium position shifts to 'e' from 'e'
- Due to changes in supply and demand, price rises to 'O<sub>1</sub>' from 'O<sub>0</sub>' and quantity rises to 'Q<sub>1</sub>' from 'Q<sub>0</sub>'.

Shifts in equilibrium

28/4/22  
Thursday

1. Simultaneous changes in both demand and supply.
2. Increase in supply and decrease in demand.
3. Decrease in supply and increase in demand.

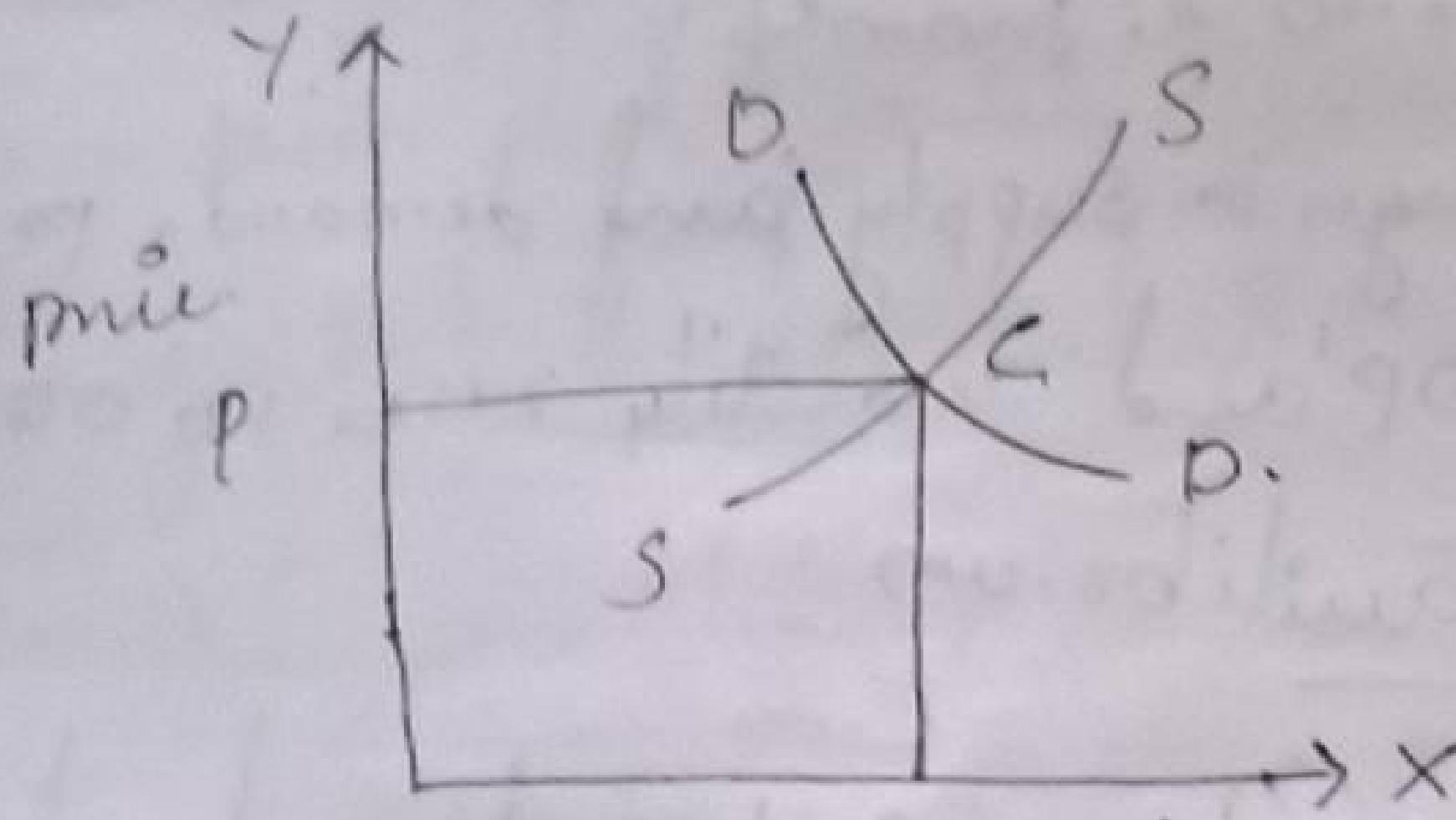


Quantity demanded and supply.

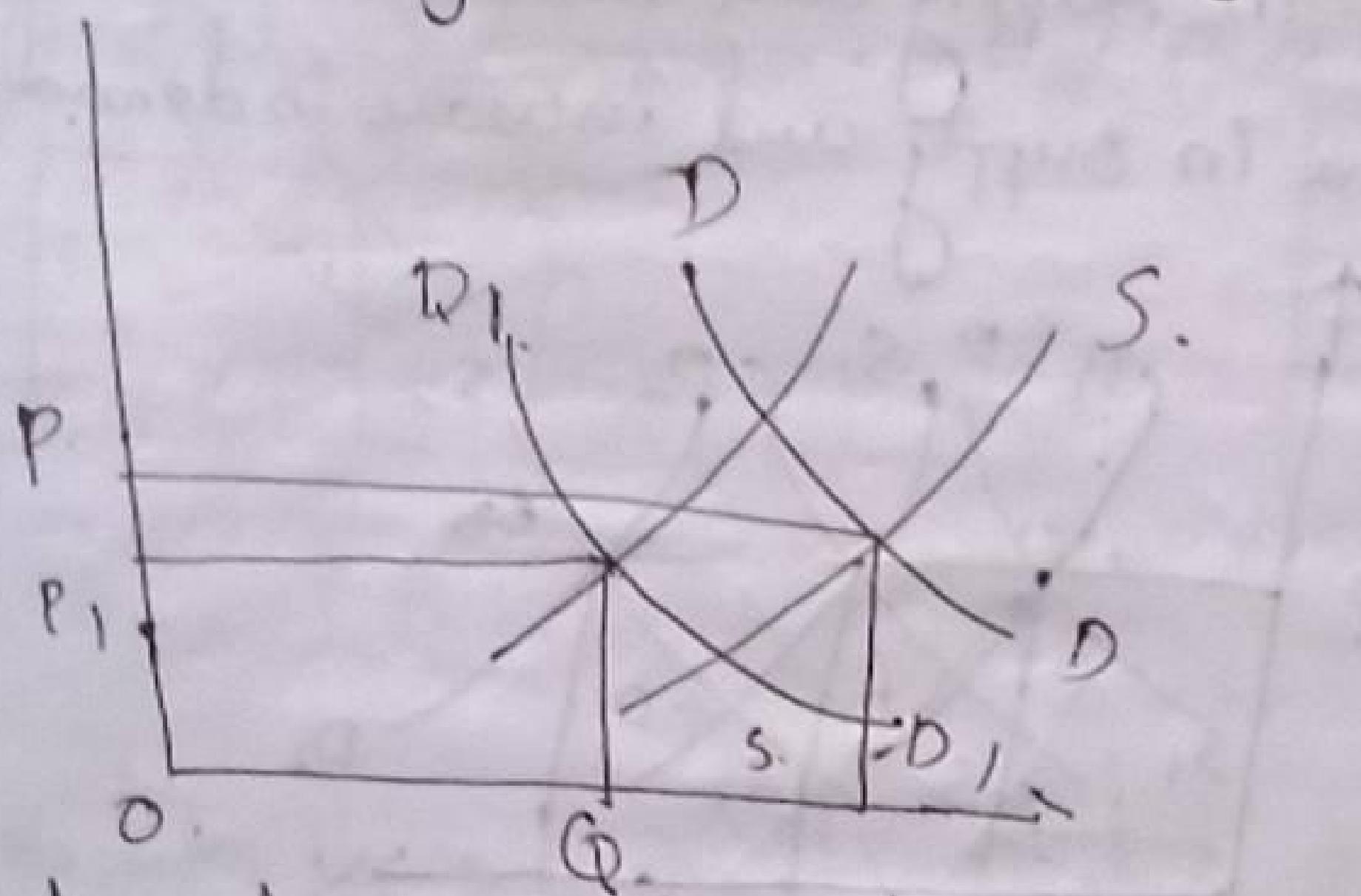
Simultaneous changes in both demand & supply.

- Changes in demand and supply are same (increase or decrease)
- If the changes are increasing (both demand and supply curves shift to rightward), price remains the same and quantity increases

Decrease in demand and increase in supply



Quantity demand and supply.



when demand falls and supply increases, quantity either remains the same or falls. Price also falls.

Elasticity of demand or price elasticity of demand.  
Price elasticity is the responsiveness in quantity demand due to change in price.

$\epsilon_P = \frac{\text{Proportionate change in demand}}{\text{Proportionate change in price}}$

$$= \frac{\frac{\Delta D}{D}}{\frac{\Delta P}{P}} = \frac{\Delta D}{D} \times \frac{P}{\Delta P}$$

$$\boxed{e_p = \frac{\Delta Q}{\Delta P} \times \frac{P}{Q}}$$

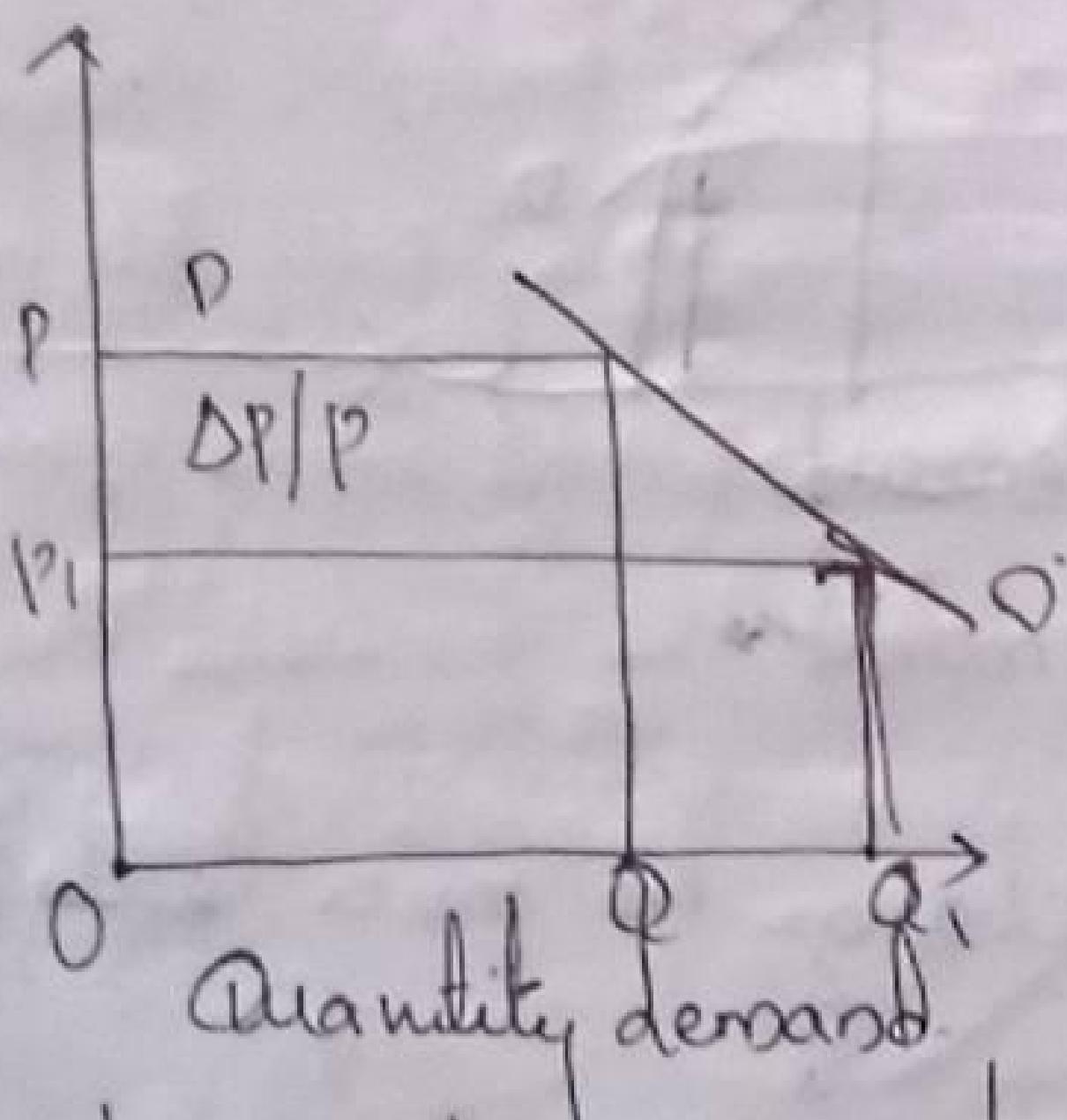
## Type of elasticity

- 1) More elastic demand
- 2) less elastic demand
- 3) Unit elastic demand
- 4) Perfectly elastic demand
- 5) Perfectly inelastic demand.

### 1. More elastic demand (or elastic demand)

A given proportionate change in price leads to more than proportionate change in quantity demand.

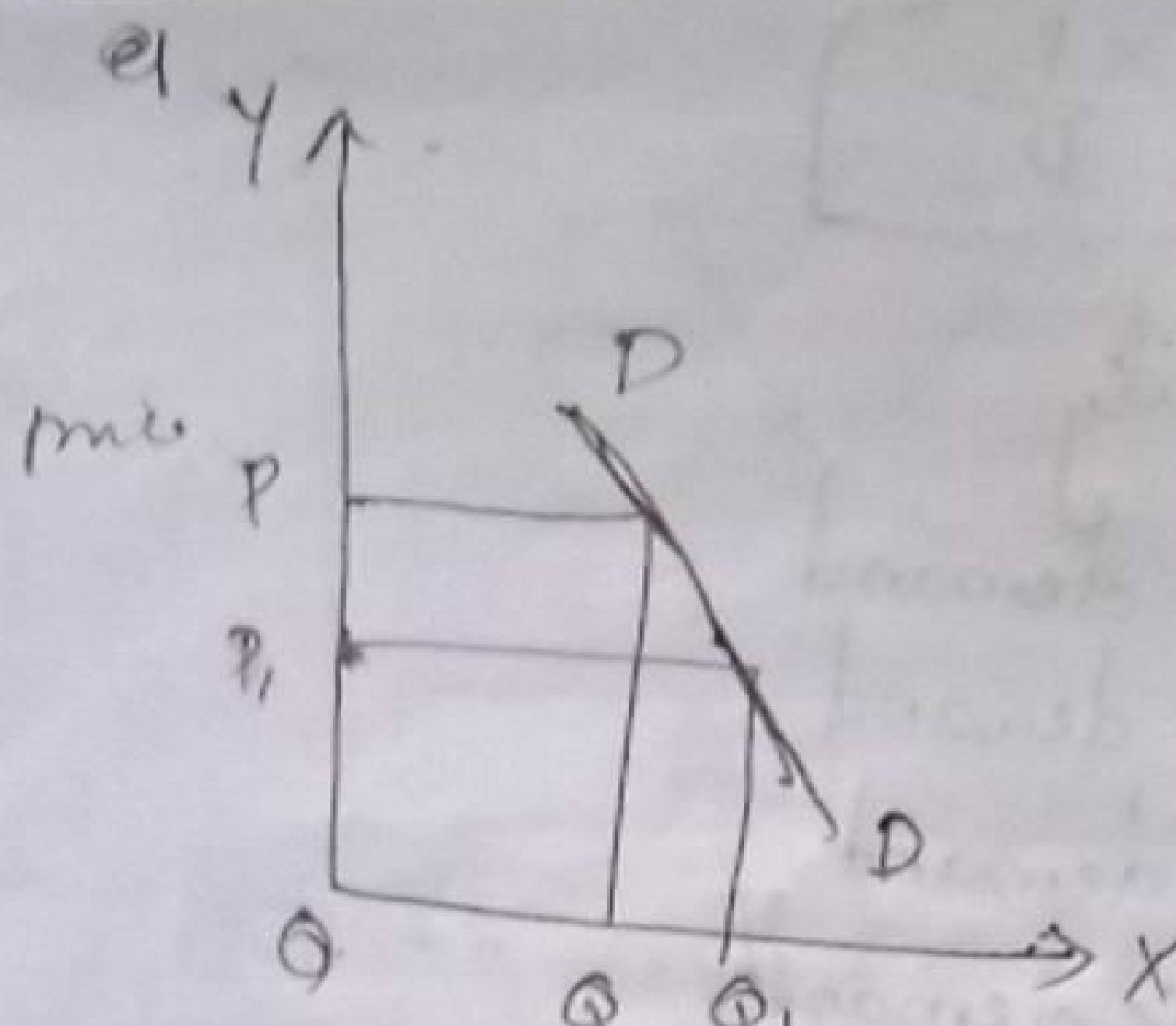
$$e_p > 1$$



### 2. less elastic demand (inelastic demand)

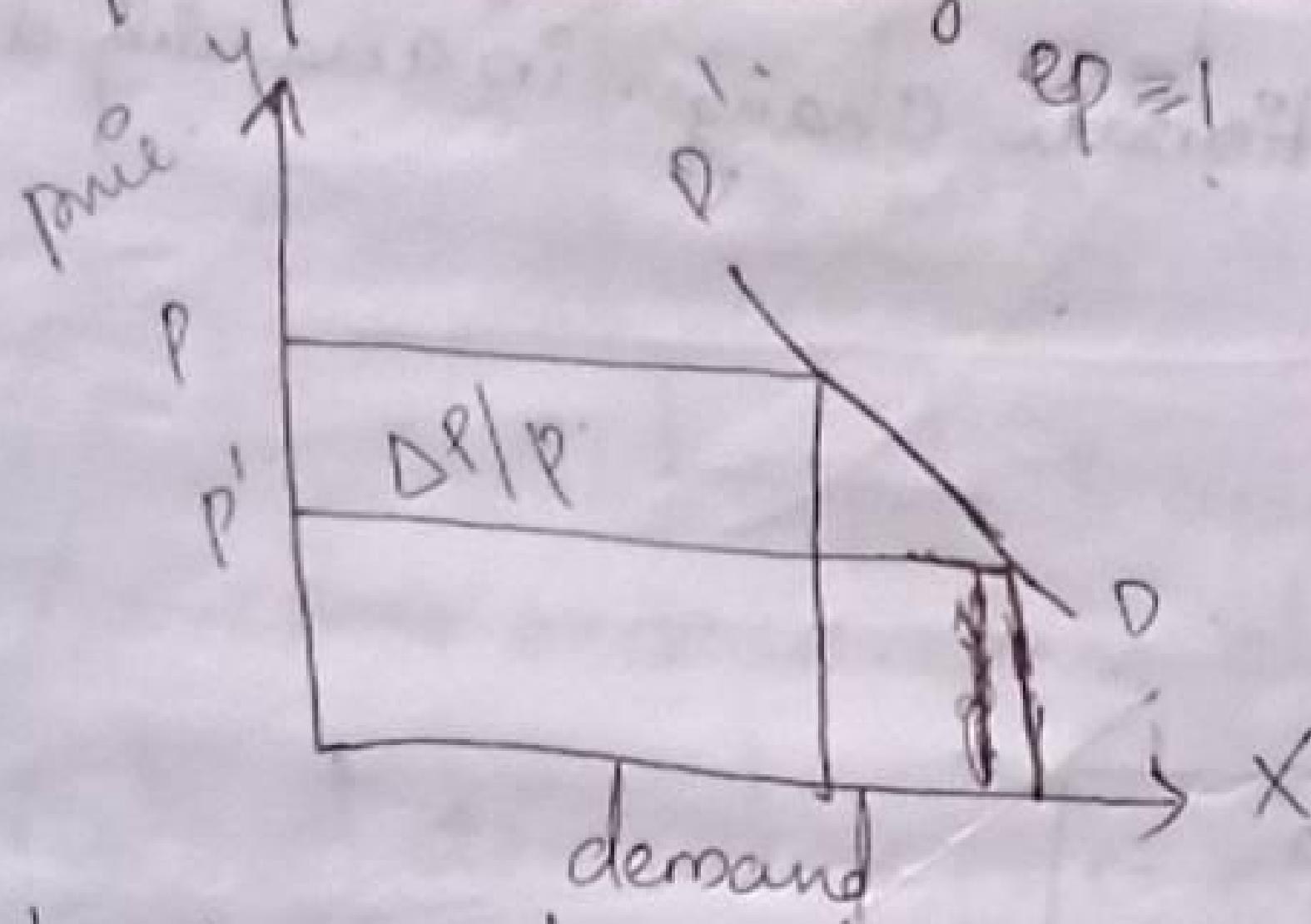
A given proportionate change in price lead to less than proportionate change in demand.

$$e_p < 1$$



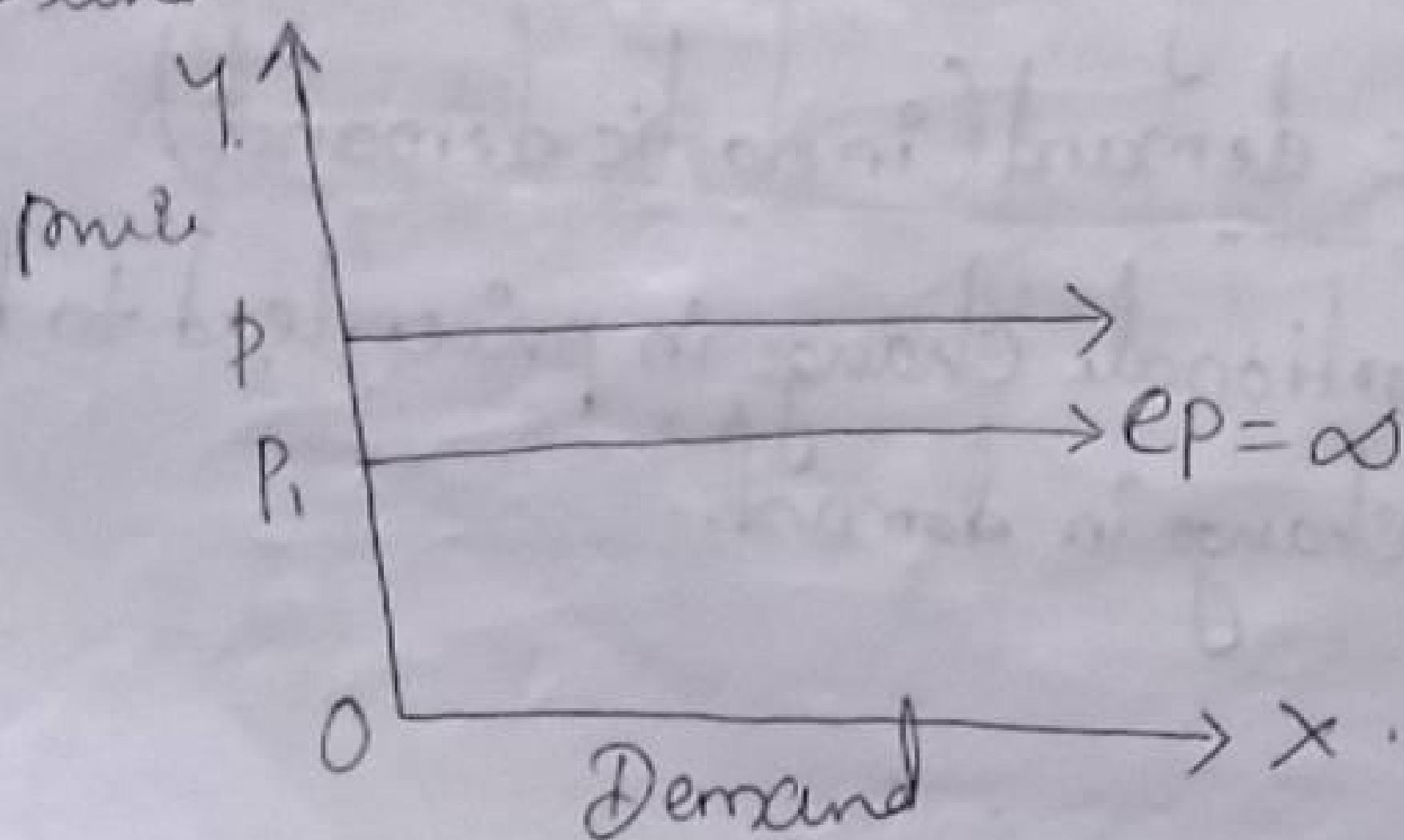
### 3. Unit elastic demand

A given proportional change in price results in the same or equal proportionate change in demand



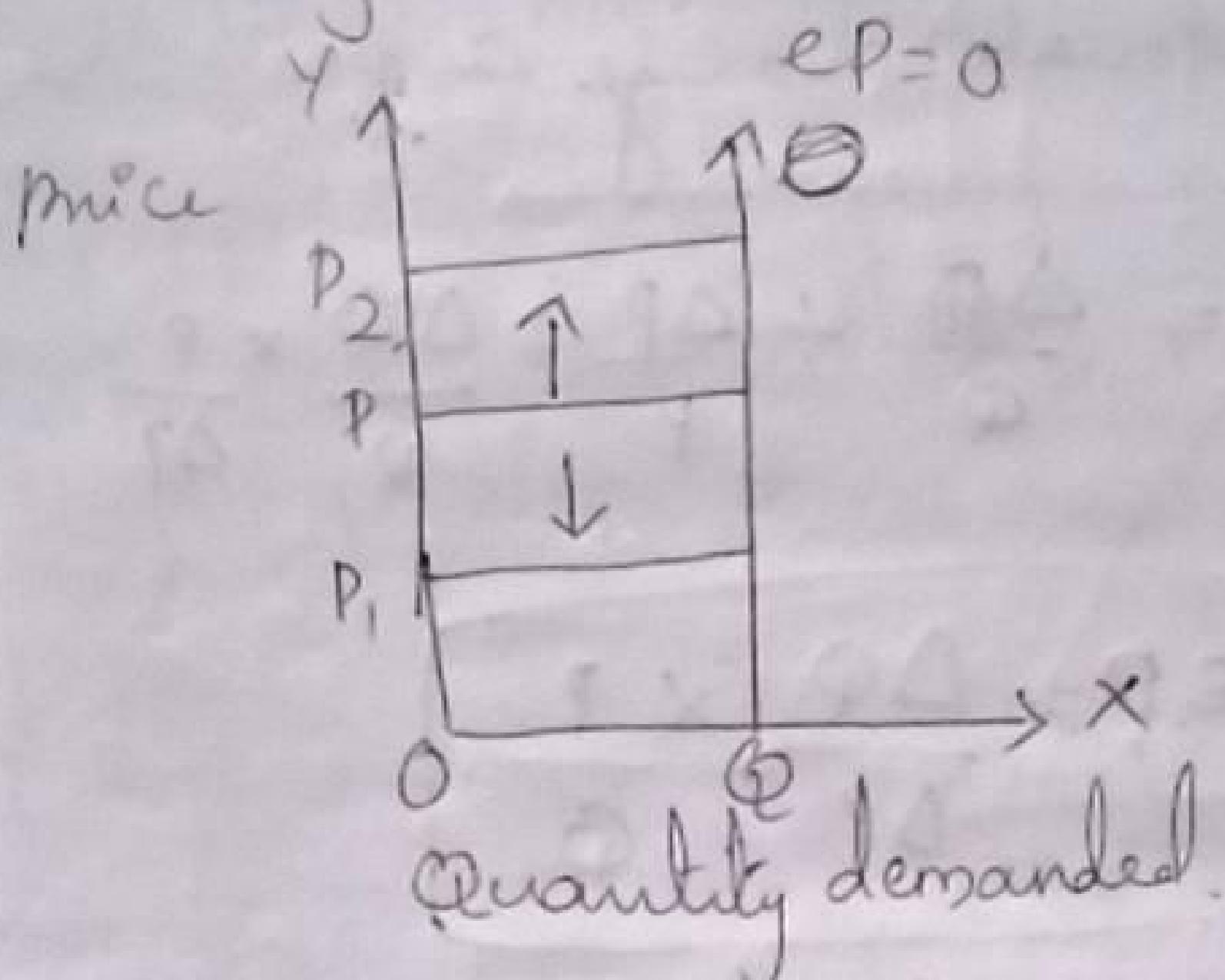
### 4 Perfectly elastic demand

A given proportionate change in price leads to infinite change in demand



## 5) Perfectly inelastic demand

A given proportionate change in price leads to no change in quantity demanded.



## 16/5/22 Monday Measurement of elasticity

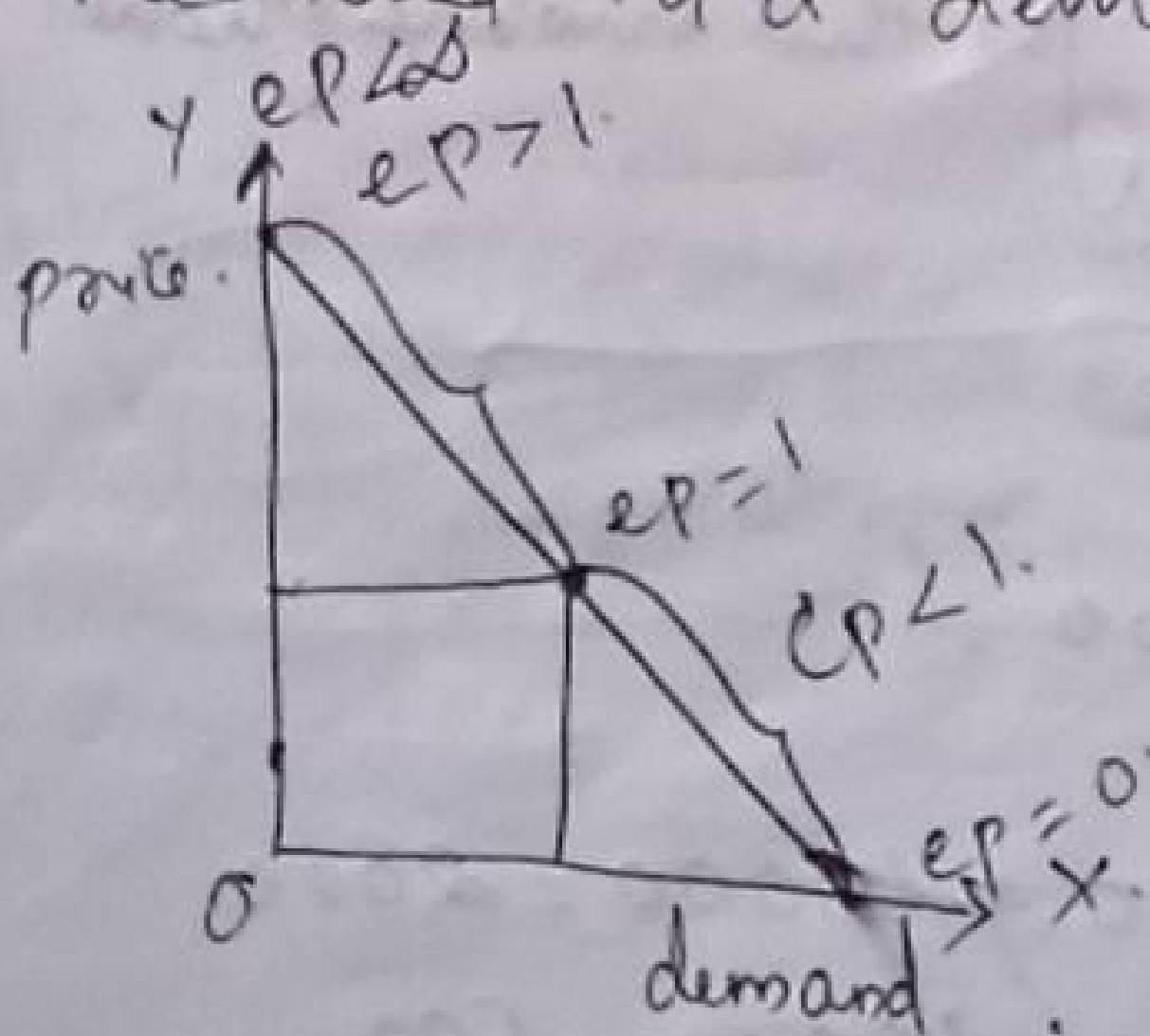
Two ways

- 1) Graphic Method.
- 2) Percentage Method.

### 1) Graphic Method

→ Elasticity is measured on a diagram.

• It is measured in a demand curve.



## 2) Percentage Method

$e_p = \frac{\text{Proportional change in demand}}{\text{Proportional change in price}}$

$\therefore \frac{\Delta Q/Q}{\Delta P/P} = \frac{\Delta Q}{Q} \div \frac{\Delta P}{P} = \frac{\Delta Q}{Q} \times \frac{P}{\Delta P}$

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

P - initial price

Q - initial quantity demanded

$\Delta Q$  - New quantity - initial.

$\Delta P$  - New price - initial price

A mobile manufacturing company sells 10000 mobile phones at a price of ₹ 4500/unit and in a year the company sells 10000 hundred when they decrease the price to ₹ 4000. Sales increase to 12000. What is the price elasticity of demand for this mobile phone?

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

$$P = ₹ 4500$$

$$Q = 10000$$

$$\Delta Q = 12000 - 10000 = 2000$$

$$\Delta P = 4000 - 4500 = -500$$

$$EP = \frac{2000}{-500} \times \frac{+500}{10000} = -4.5 = -1.8$$

$EP > 1$

neglect (-)

elasticity = more elasticity.

Suppose this company wants to increase its sales by 50%. To what percentage its price has to be reduced.

$EP = \frac{\text{Percentage change in demand}}{\text{Percentage change in price}}$

Percentage change in price.

$$EP = 1.8$$

Percentage change in demand = 50%.

$$1.8 = \frac{50}{x}$$

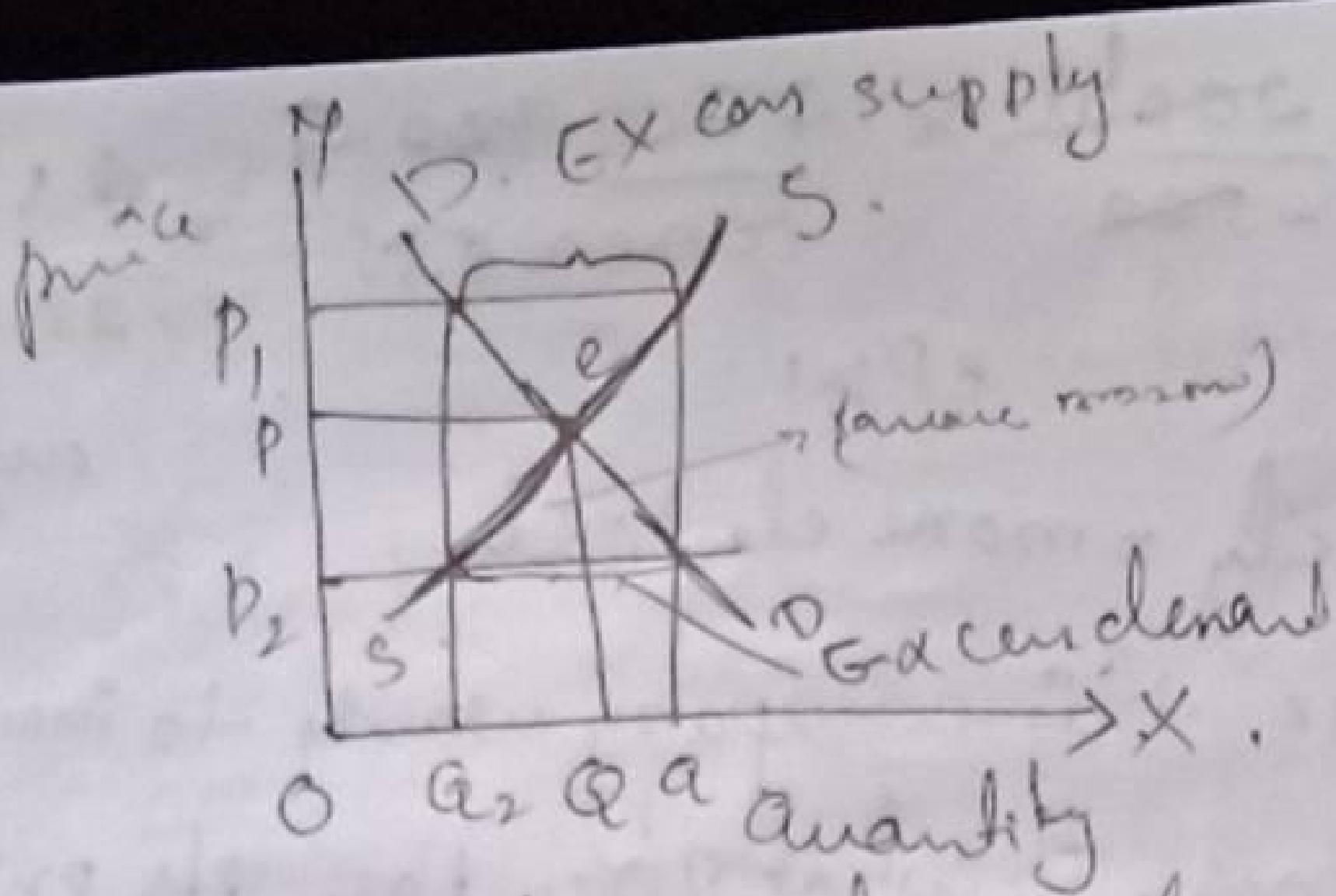
$$x = \frac{50}{1.8} = \underline{\underline{27.78\%}}$$

$$\begin{array}{r} 2 \\ 18 \end{array} \overline{) 500} \quad \begin{array}{r} 27 \\ 18 \end{array} \overline{) 500} \\ 36 \quad 136 \\ \hline 14 \quad 140 \\ \hline 126 \\ \hline 240 \end{array}$$

Excess demand and excess supply

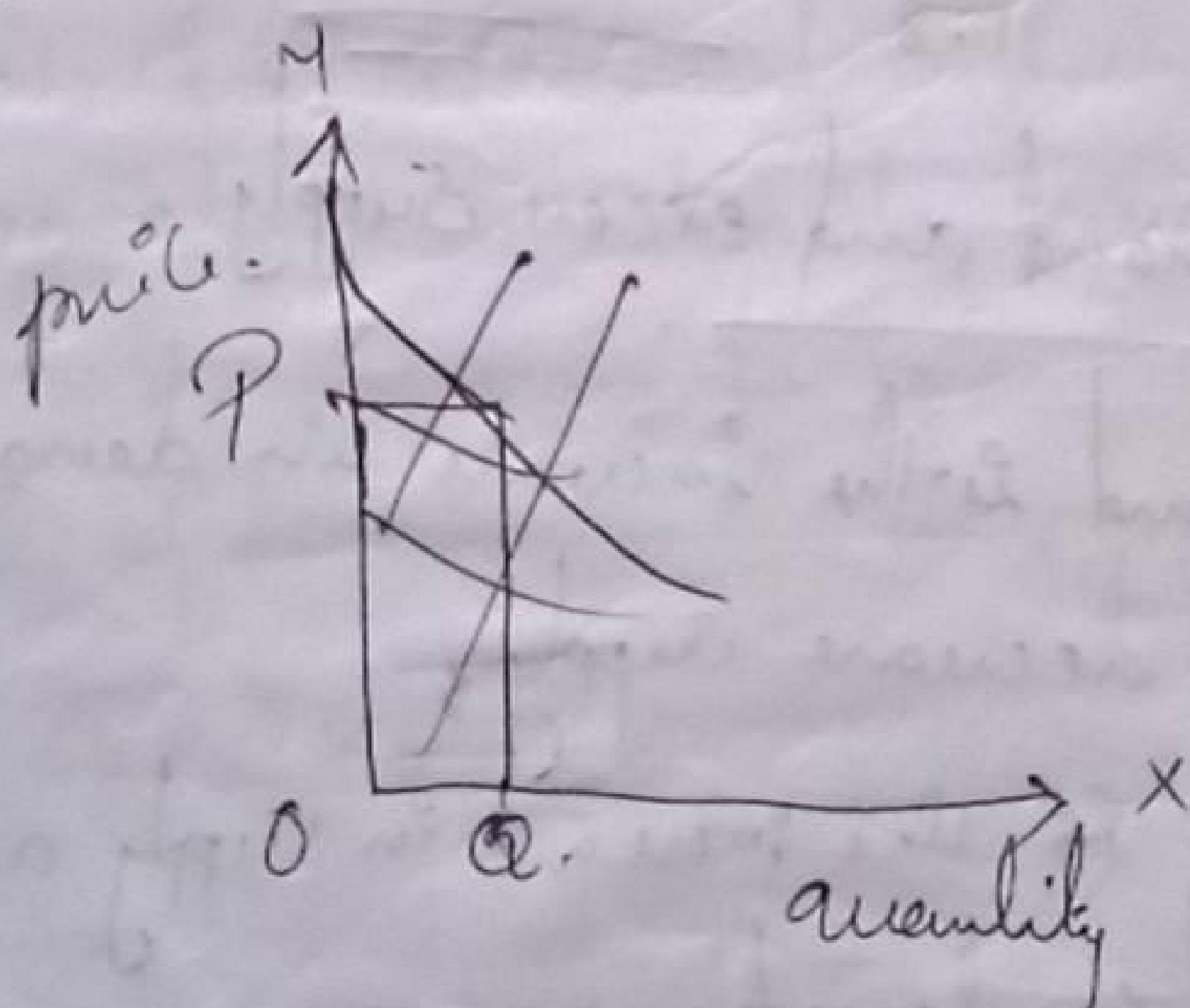
Excess demand is the increase in demand and no change or decrease supply.

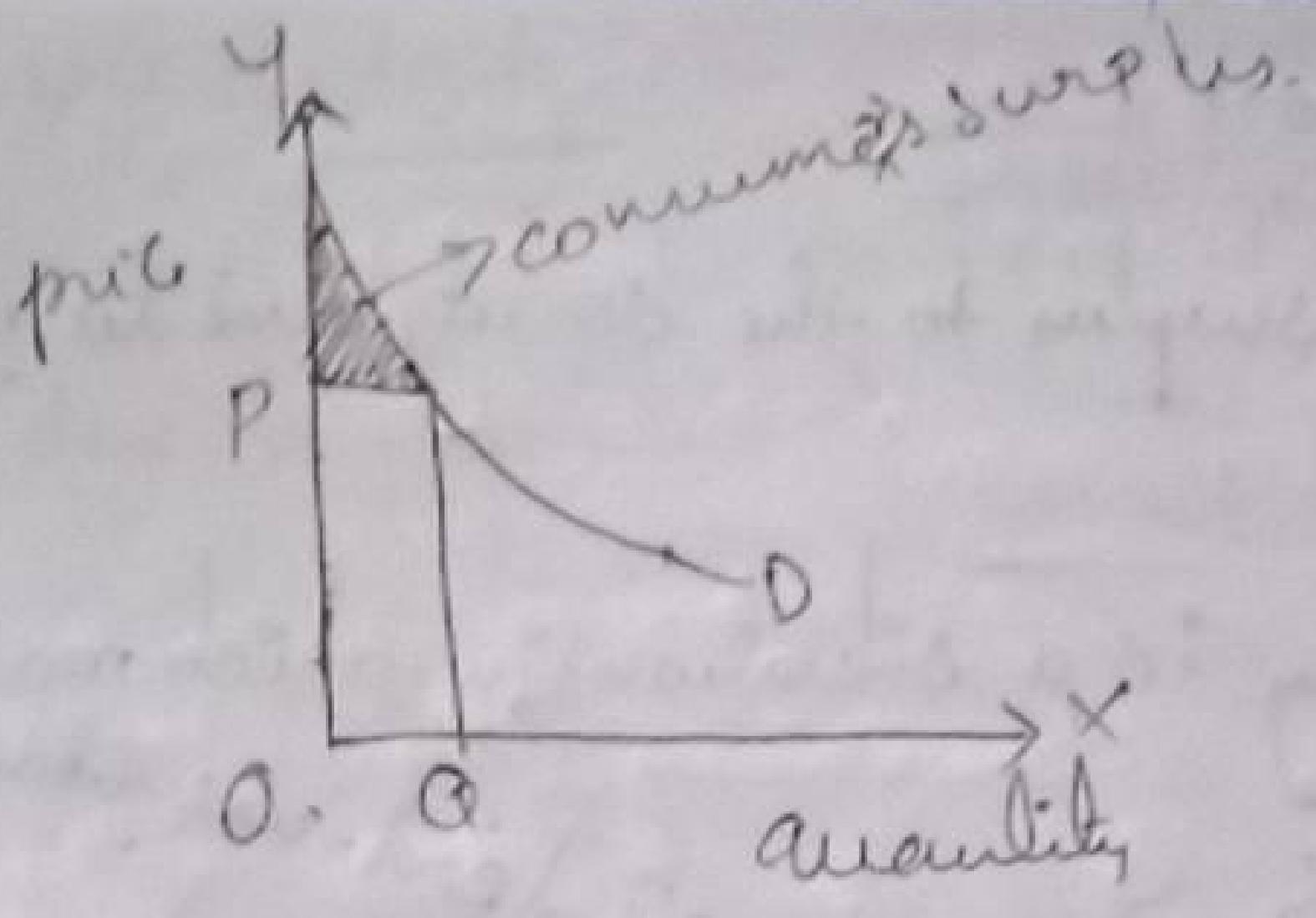
Excess supply is the increase in supply and no change or decrease in demand.



## Consumer Surplus and Producer Surplus

- Consumer's surplus is the difference between consumer's willingness to pay and the actual price paid for the product.
- If willing price > actual price<sup>Paid</sup>, consumer's surplus is positive.
- If willing price < actual price paid, consumer's surplus is negative

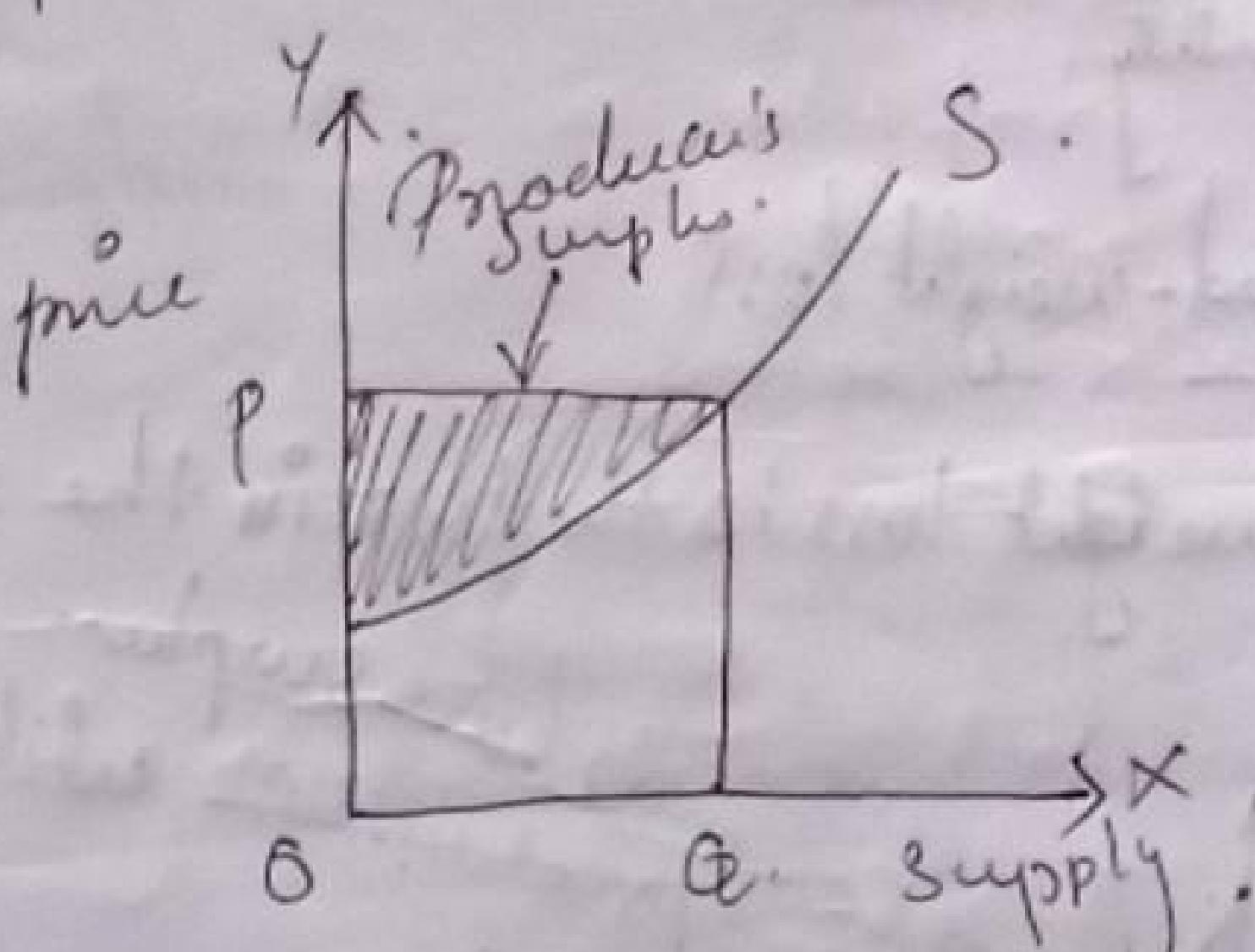




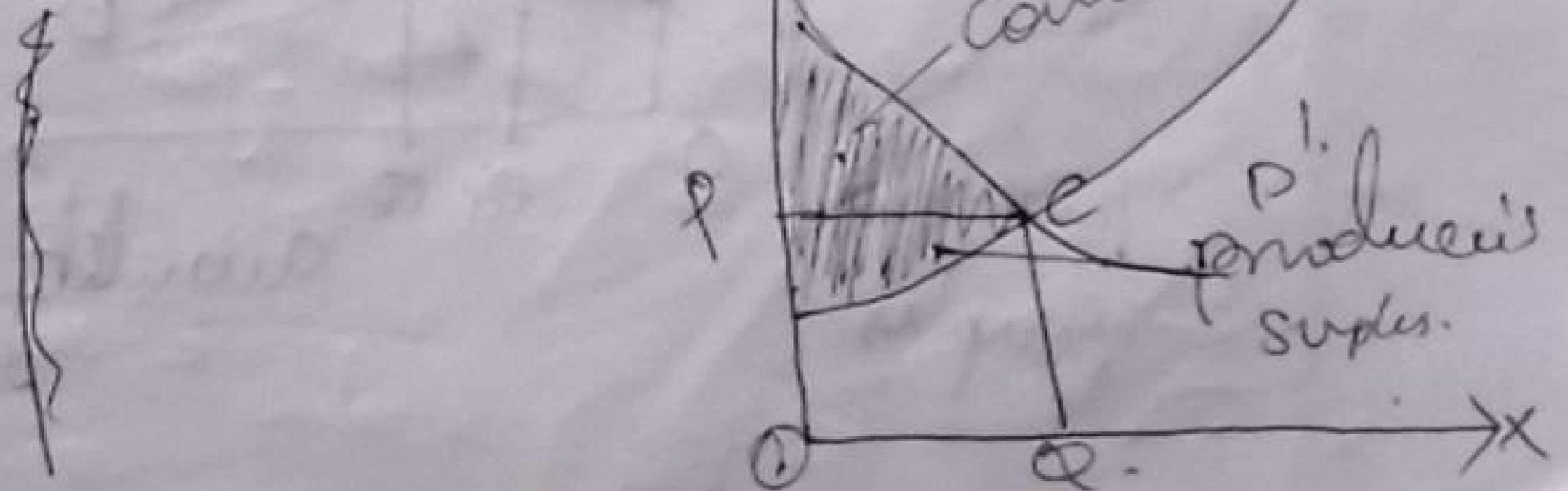
## Producer's surplus

producer's surplus is the difference between the lowest price a producer sell an afford and the market price for his product.

If lowest price > market price, producer's surplus is positive and vice-versa

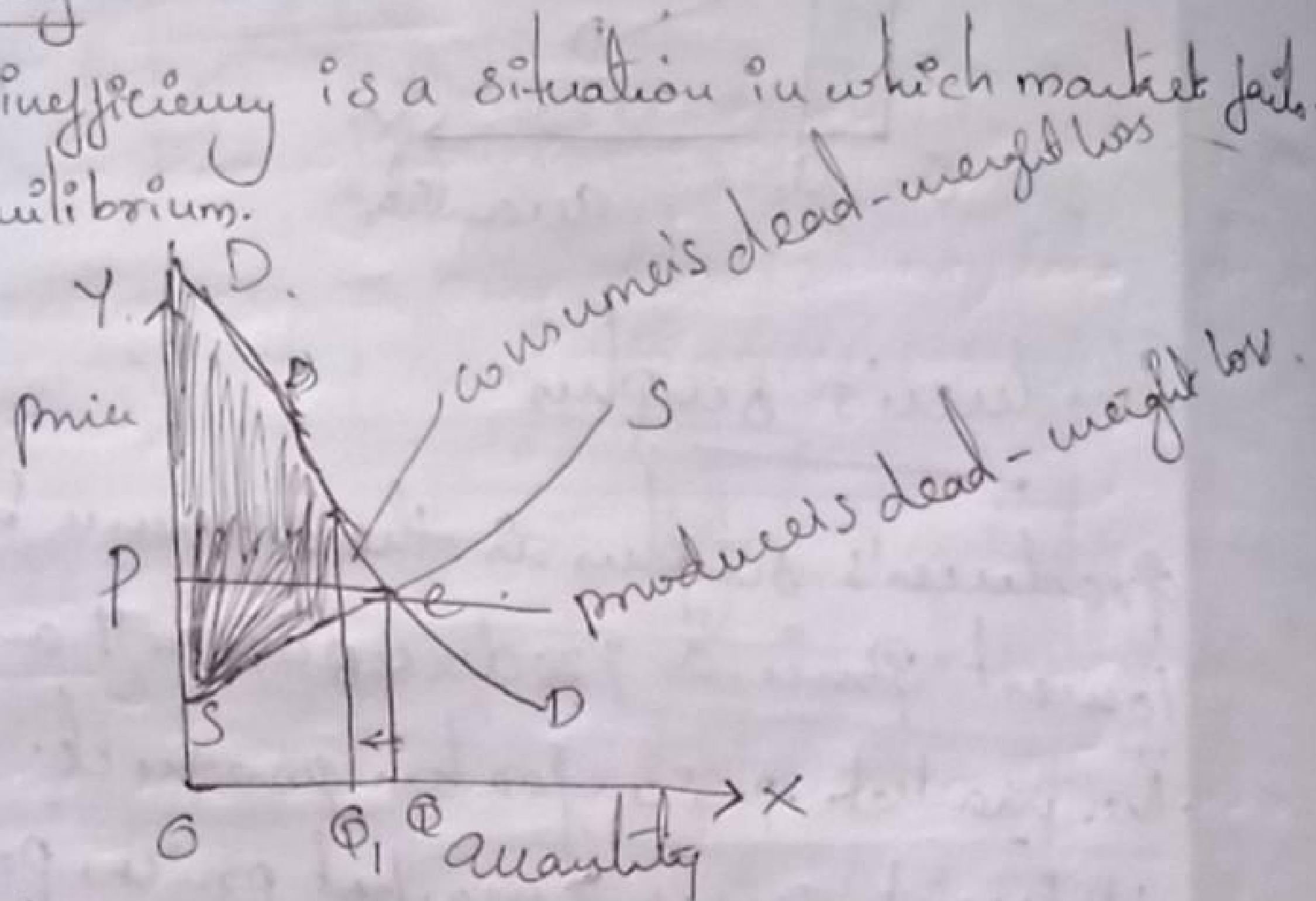


19/5/22 Producers's surplus and consumer's surplus  
Thursday



## Dead-weight loss

- It is the loss in surplus to the society due to market inefficiency.
- Market inefficiency is a situation in which market fails to attain equilibrium.

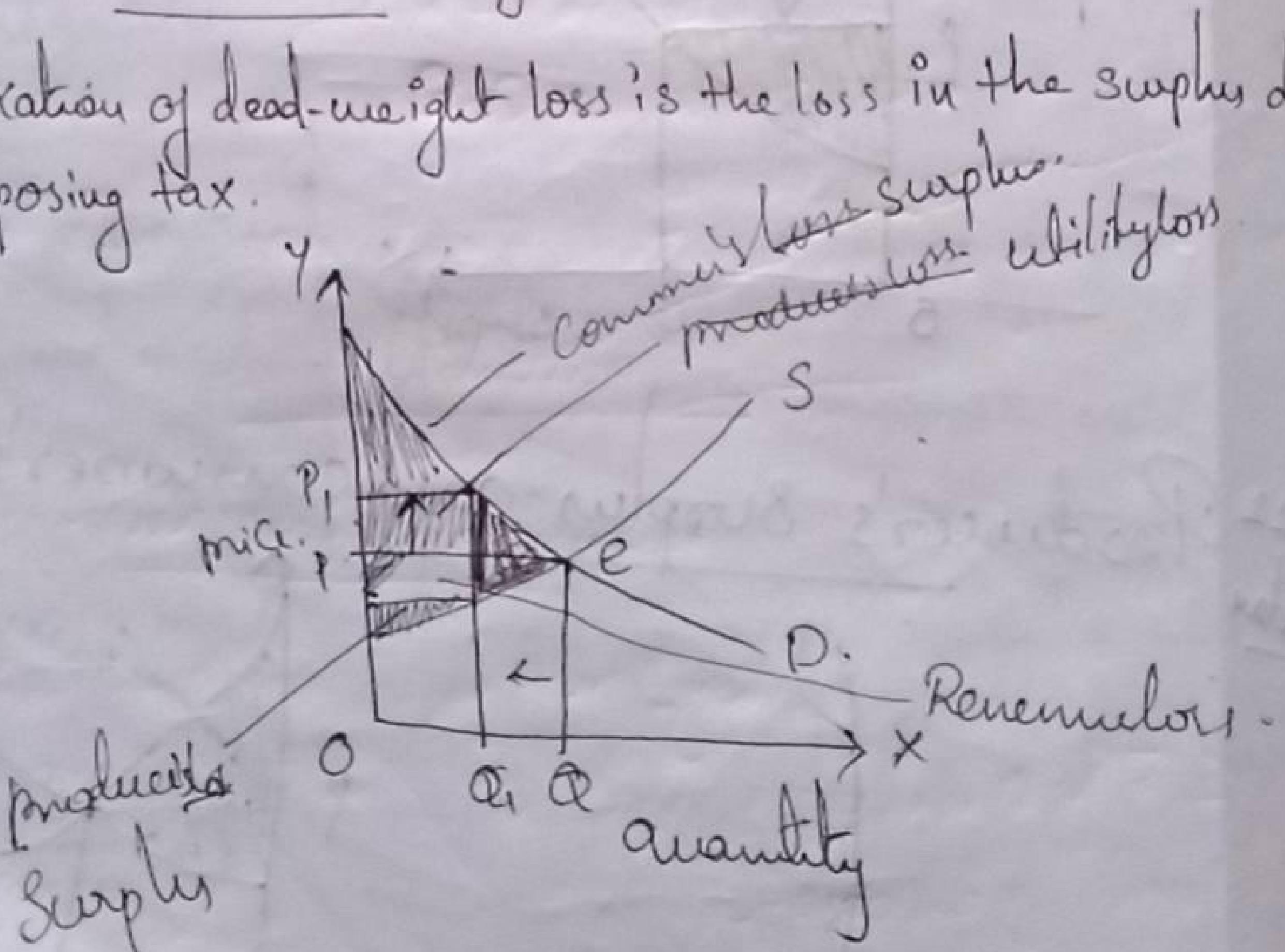


P - equilibrium price

Q - equilibrium quantity

## Taxation and dead-weight loss

- Taxation of dead-weight loss is the loss in the surplus due to imposing tax.



## Cross elasticity

Cross elasticity is the proportional change in demand of  $y$  due to proportional change in the price of  $x$ .

$$e_c = \frac{\Delta Q_y}{Q_y} \cdot$$

$$\frac{\Delta P_x}{P_x}$$

$$e_c = \frac{\Delta Q_m}{\Delta P_y} \times \frac{P_y}{Q_x}$$

## Two goods

- 1) Substitutes -
- 2) Complementary

19/5/22  
Thursday

## Module -2

### Production

It is the process of converting inputs (factors of production - land, labour, capital and organisation) into output (final goods)

### Production function

It is the functional relationship between input and output

Production function  $Q = f(N, L, k, O)$

$Q$  = output.

$N$  = Land

$L$  = labour

$k$  = Capital

$O$  = organization

### short-run production function and long-run production function

#### short-run production function

• Availability of time is less than 1 year.

• Short run production function can be expressed as  $Q = f(\bar{K}, L)$

$Q$  = output

$\bar{K}$  = fixed amount of capital

$L$  = amount of labour which is variable.

20/5/22  
Studies

## long-run production function

- long-run is considered as a period of <sup>time</sup> more than 5 years.

- In the long-run, all factors are variable

$$Q = f(K, L)$$

K - variable amount of capital.

L - variable amount of labour.

## Theories of production

1) law of variable proportion

2) Return to scale.

1) law of variable proportion

• This law states that with the given amount of capital, labour is the only factor variable as inputs in the production process.

• According to this law, when more amount of labour is employed, marginal product of labour goes on diminishing and it even becomes negative.

## Assumptions

1. Two factors are used labour and capital.

2. Labour is variable and capital is fixed.

3. No technological progress.

4) perfect competition operates

5. Applicable only in the short-run

6. labour is homogeneous

### Tabular Representation

units of labour	Total product (TP)	Average product (AP)	Marginal product (MP)	
1	8	8	8	
2	18	9	10	
3	30	10	12	
4	40	10	10	
5	45	9	5	
6	48	8	3	
7	48	6.8	0	
8	47	6.7	-1	
9	45	5	-2	

} increasing return  
} diminishing return  
} negative return

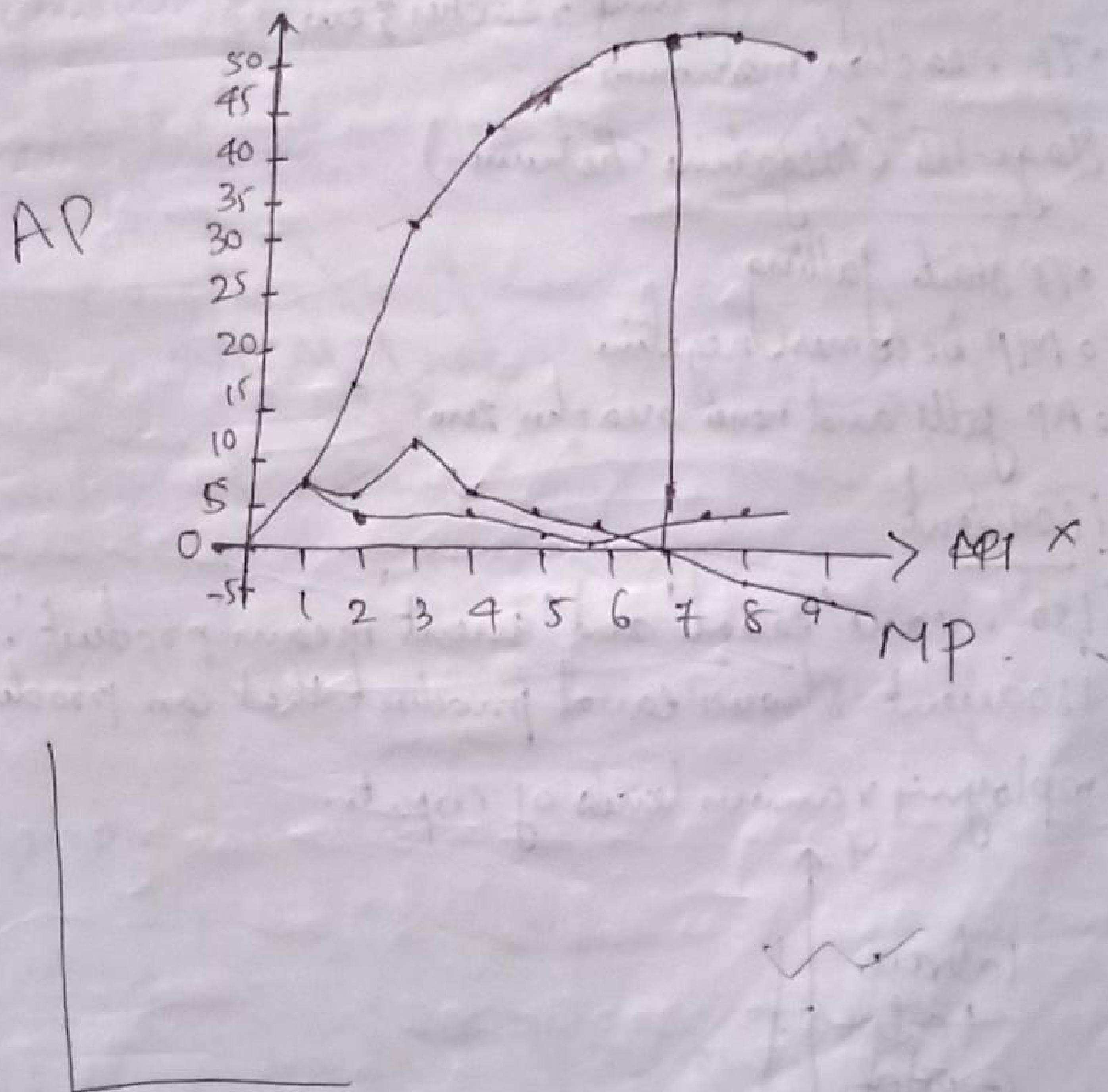
Total product (TP) - Total physical products produced.

Average product (AP) -  $\frac{TP}{\text{No. of units of labour used}}$

Marginal product (MP) -  $TP_n - TP_{(n-1)}$

$\Rightarrow$  It is the addition made to the total product

### Graphical Representation



## Stage-I (Increasing Returns)

- AP, MP, TP rise.
- MP reaches its maximum
- Increasing return and when MP becomes maximum
- TP increases at an increasing rate

## Stage-II (Diminishing Returns)

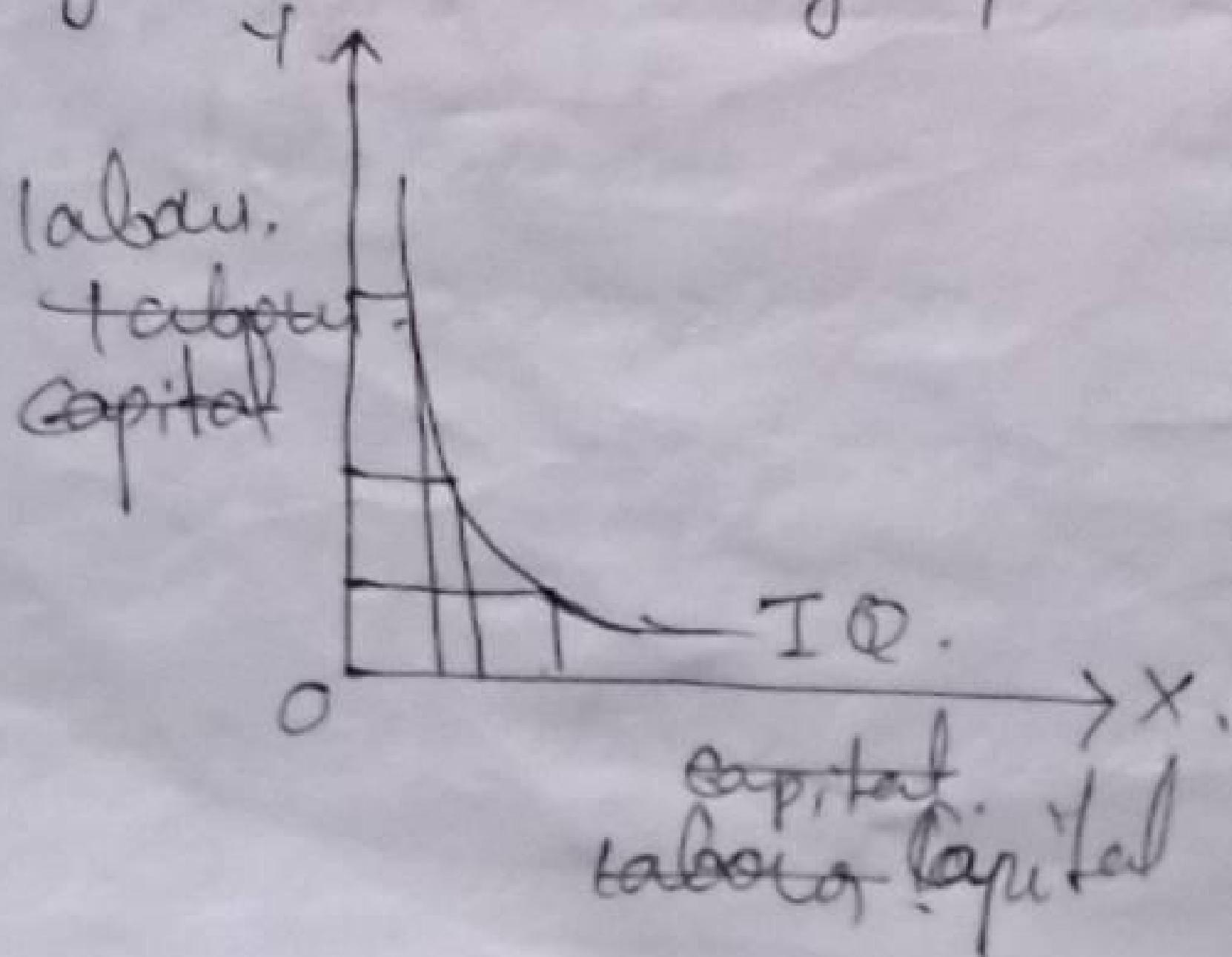
- TP rises
- AP reaches its maximum and starts falling.
- MP starts falling and reaches zero.
- TP reaches maximum

## Stage-III (Negative Returns)

- TP starts falling
- MP becomes negative
- AP falls and never reaches zero.

Isoquant

- 'Iso' means 'equal' and 'quant' means 'product'.
- Isoquant shows equal product that can be produced by employing various levels of inputs.

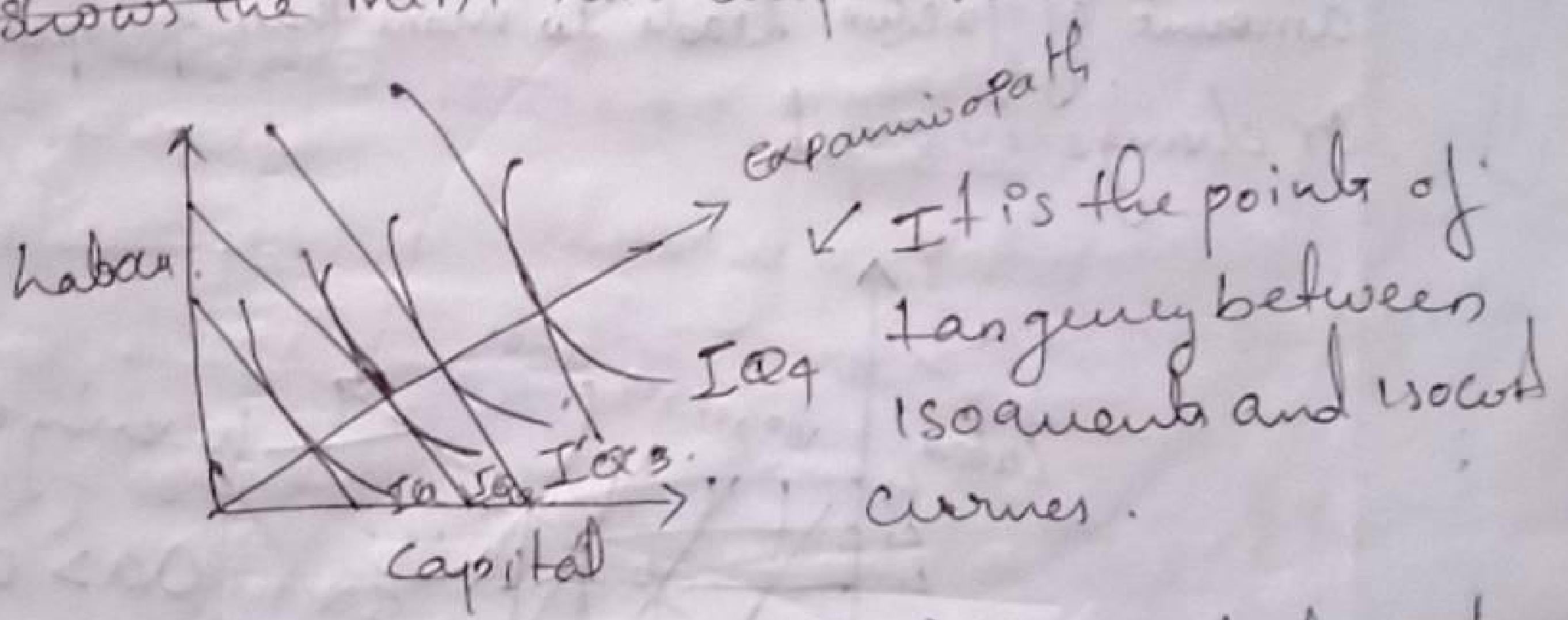


23/5/22  
Monday Properties of Isoquant

1. convex to the origin
2. Isoquants never cut each other.
3. Higher Isoquants show higher level of output.
4. Slope of Isoquant shows (MRTS) (marginal rate of technical substitution).
5. Isoquant is a negatively sloping curve.

### Expansion path

It shows the minimum output.



It shows the minimum optimum output that can be produced with the best combination of labour and capital.

### Returns to scale

This theory is related to long-run.

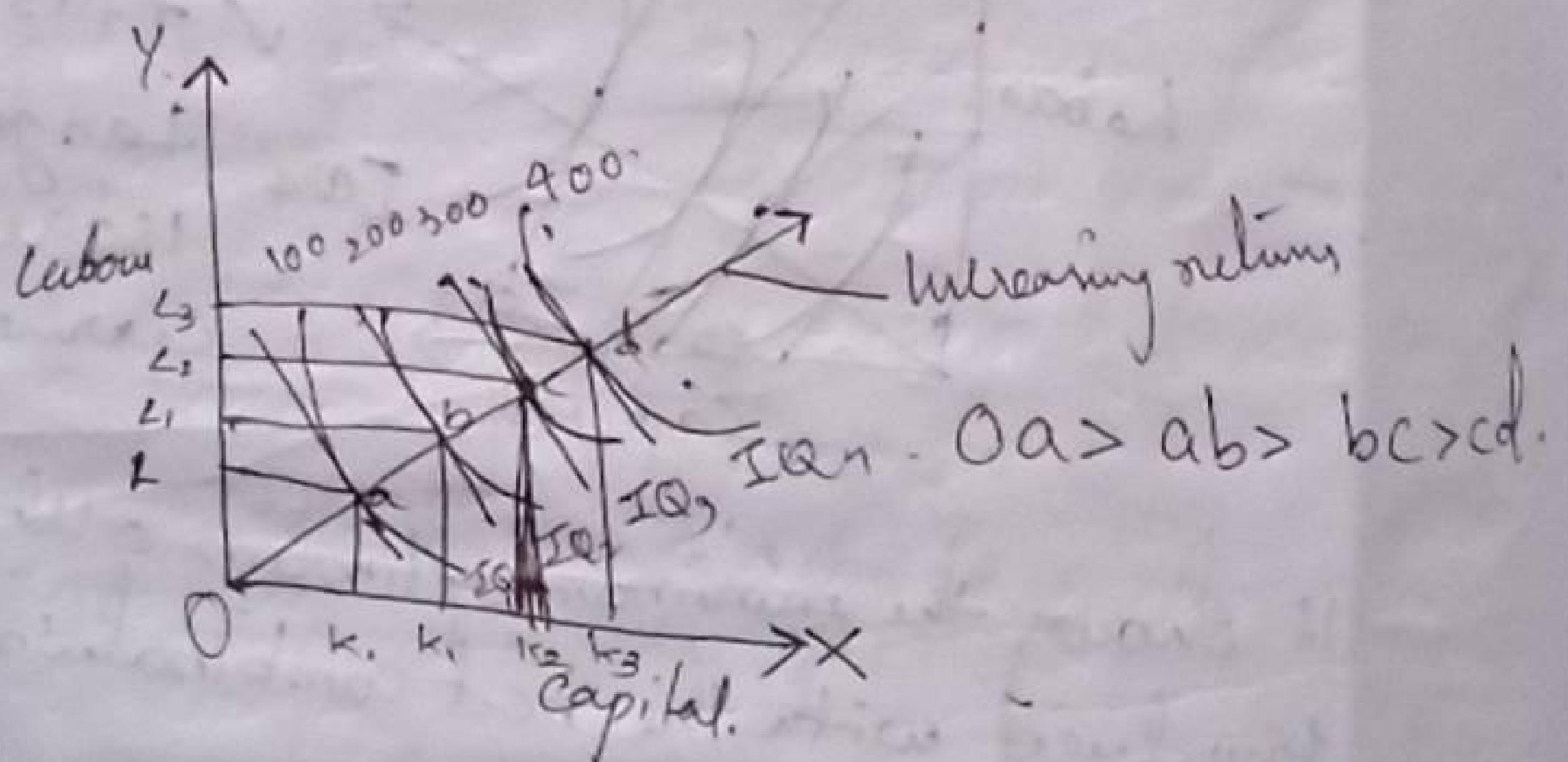
According to this theory, when two factors are employed in the production process, the firm experiences three returns, increasing returns, constant returns, and diminishing returns.

## Assumption

- 1 long run -
2. two factors (labour, capital)
3. Factors are variable
- 4 Technology is not fixed.
5. Tools used, isoquant, expansion path, isocost line, etc.

## Increasing Return to Scale

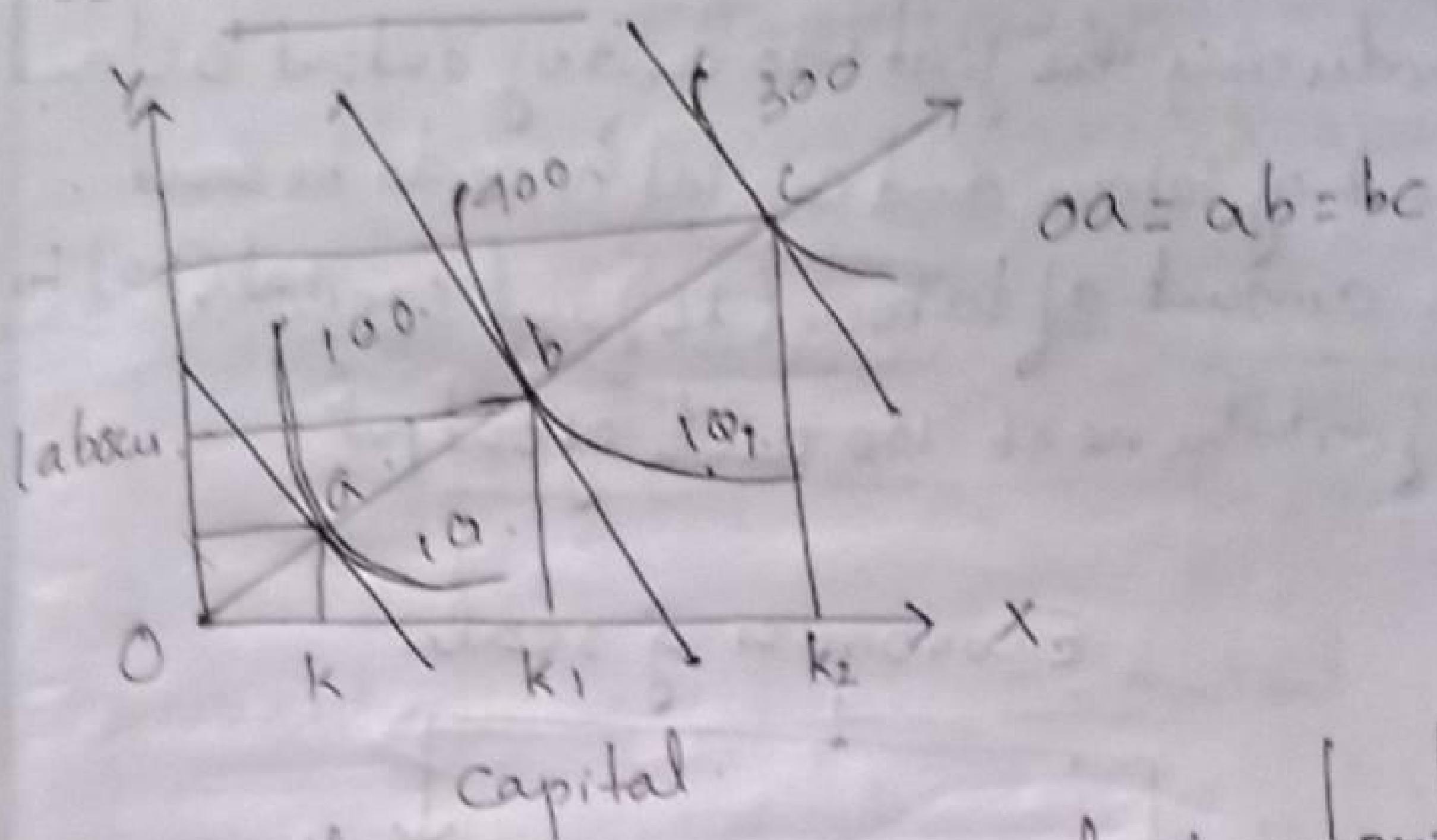
Increasing return happens when the given proportionate amount of factors leads to more than proportionate increase or change in output.



- For producing a system gives amount of output, less amount of labour and capital is used.
- In the figure  $Oa > ab > bc > cd$
- for the first 200 units of output, 'Oa' amount of labour and 'Ok' amount of capital are used.
- For the next 100 units (200) ' $bc$ ', of labour, 'k1' amount of capital are used.

This shows less amount of factors are used for next 100 units of output.

### Constant Return to scale



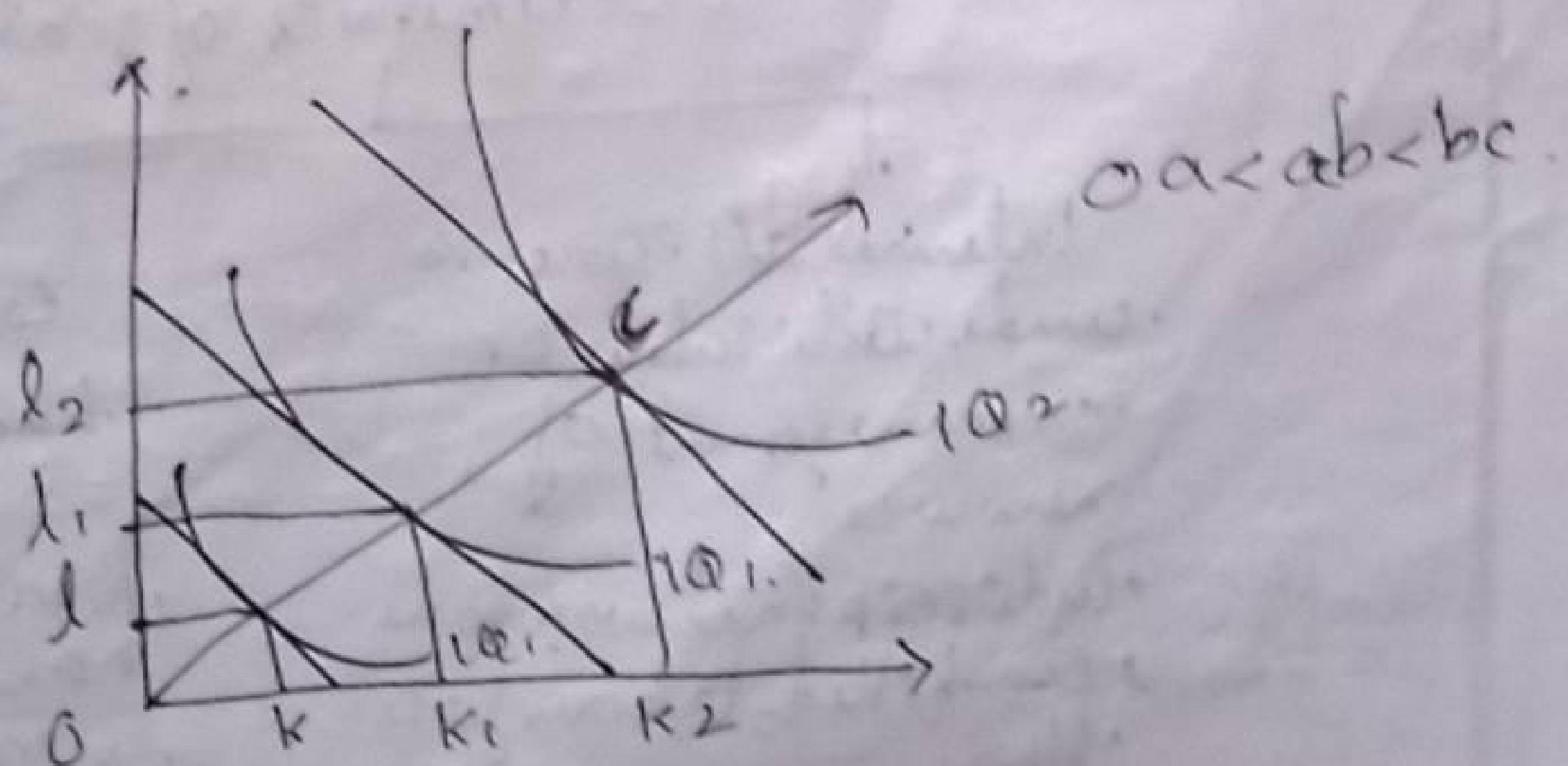
For purchasing a given amount of outputs same amount of labour & capital is used.

In the figure,  $oa = ab = bc$

for the first 100 units of output 'ok' amount of labour and 'ok' amount of capital are used.

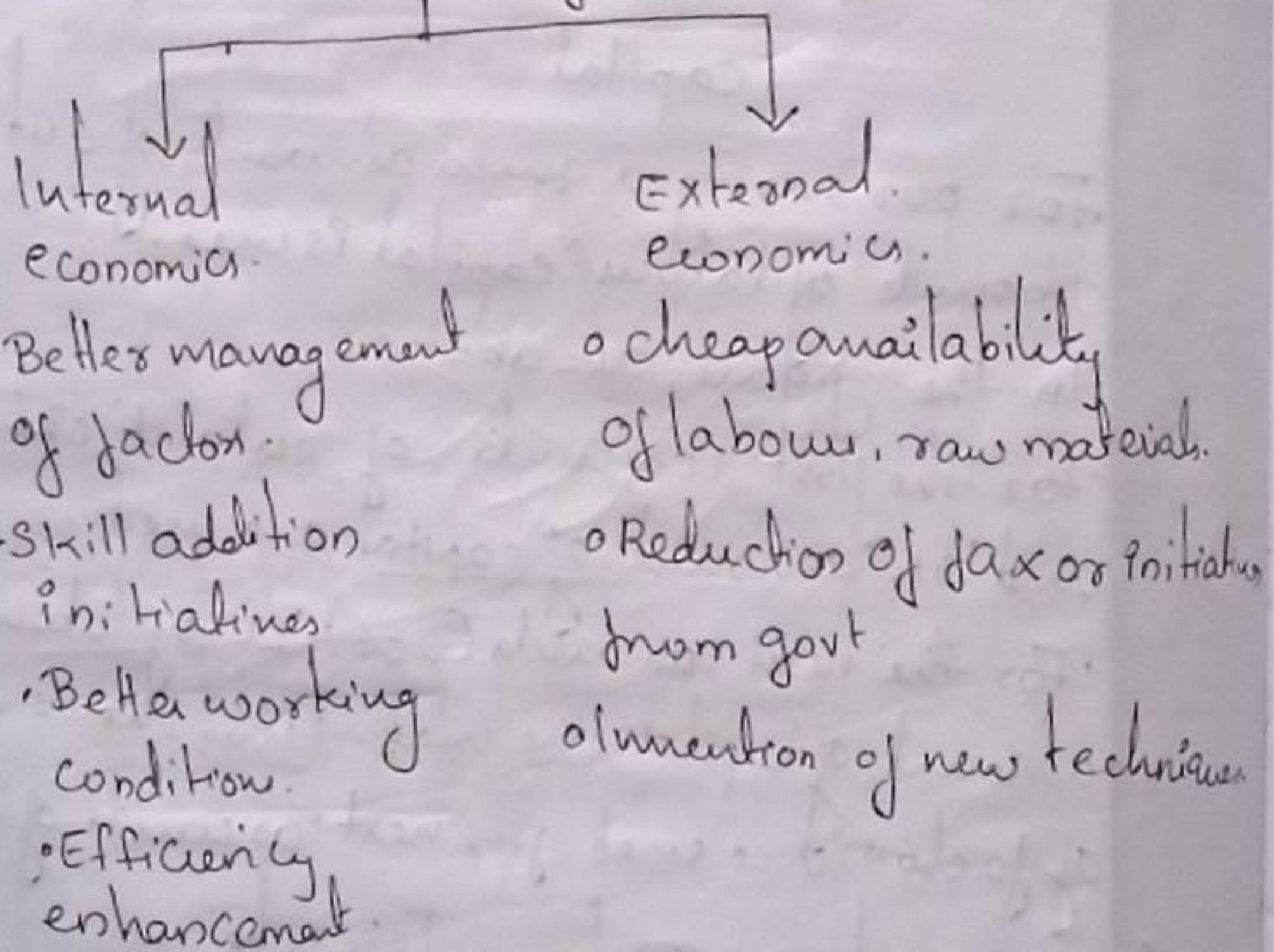
For the next 100 units (200) 'lk' of labour and 'lk' amount of capital are used. Thus equal amount of factors are used for next 100 units of output.

### Diminishing Returns to scale

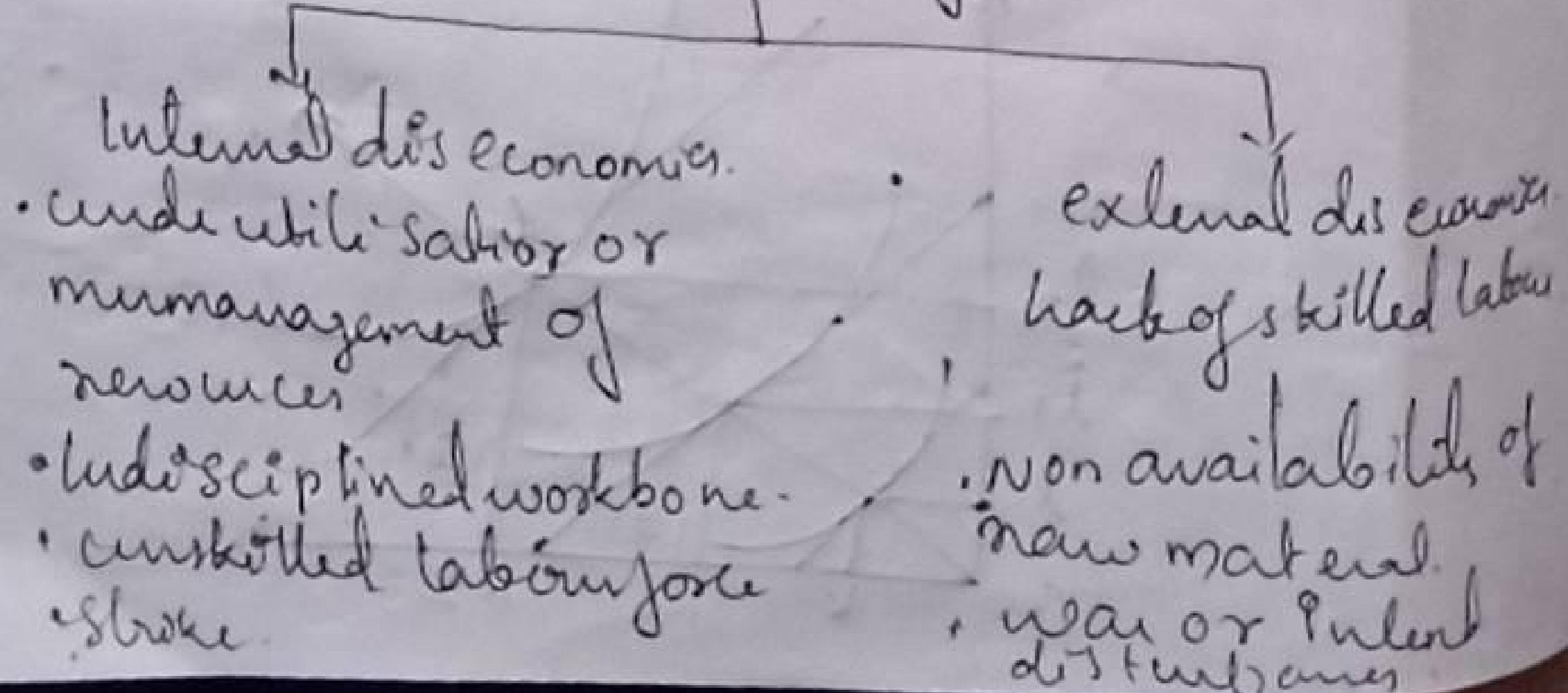


- In decreasing returns to scale, more amount of  $k$  &  $l$  have to be used for the given amount of output.
- $0a < ab < bc$
- For producing the first 100 units of output 'OL' and 'ok' amount of labour and capital have to be used.
- More amount of labour ( $1L$ ) and capital ( $1k$ ) to be used for the next 100 units of output.

### Economics of scale.



### DPS economics of scale



## Cobb-Douglas production function.

This production function was popularised if it is unempirical production function.

This production function can be expressed as.

$$Q = A L^\alpha K^\beta$$

L - amount of labour.

K - amount of capital.

Q - output.

A - Technological factor Constant.

$\alpha$  - elasticity of labour with respect to output

$\beta$  - elasticity of capital with respect to output.

If  $\alpha + \beta > 1$ , return to scale is increasing.

If  $\alpha + \beta = 1$ , return to scale is constant.

If  $\alpha + \beta < 1$ , return to scale is diminishing.

Properties of ~~c-d~~ production function.

1) A is technological factor

2) 'α' and 'β' are output elasticities of labour and capital respectively.

3) c-d production function is an empirical production function

$$4) A = \frac{Q}{L^\alpha K^\beta}$$

5) Marginal product of L can be expressed as,

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Thursday

$$Q = A \alpha L^{\alpha-1} K^\beta$$

Marginal product of  $K$  can be expressed,

$$\frac{\partial Q}{\partial K} = A L^\alpha \beta K^{\beta-1}$$

Suppose <sup>the</sup> production function is given as

$Q = 2K^{1/2} L^{1/2}$ . what will be the output when  $K=16$ ,  
 $L=36$ .

$$\begin{aligned} Q &= A L^\alpha K^\beta \\ &= 2(16)^{1/2} \times (36)^{1/2} \\ &= 2 \times 4 \times 6 = 48 \end{aligned}$$

what is the marginal product of labour when  $K=16$ ,  
 $L=36$ .

$$\begin{aligned} Q &= A L^\alpha K^\beta \\ \frac{\partial Q}{\partial L} &= A \alpha L^{\alpha-1} K^\beta \\ &= 2 \times \frac{1}{2} (36)^{1/2-1} (16)^{1/2} \end{aligned}$$

$$\begin{aligned} MP_L &= A \alpha L^{\alpha-1} K^\beta \\ &= 2 \times \frac{1}{2} 36^{1/2-1} 16^{1/2} \\ &= 36^{-1/2} \times 4 \end{aligned}$$

$$= \frac{4}{6} = \underline{\underline{\frac{2}{3}}}, \text{ what is the average product of capital}$$

when  $K=16, L=36$ .

Average product of labour

$$= Q/L =$$

= 48

Average product of capital

$$\frac{Q}{K} = \frac{48}{16} = 3$$

## Cost

• Cost is the expenses incurred for producing goods.

•  $C = f(r, w, i)$

$$C = f(r, w, i)$$

incurred

## Types of cost

• Fixed cost

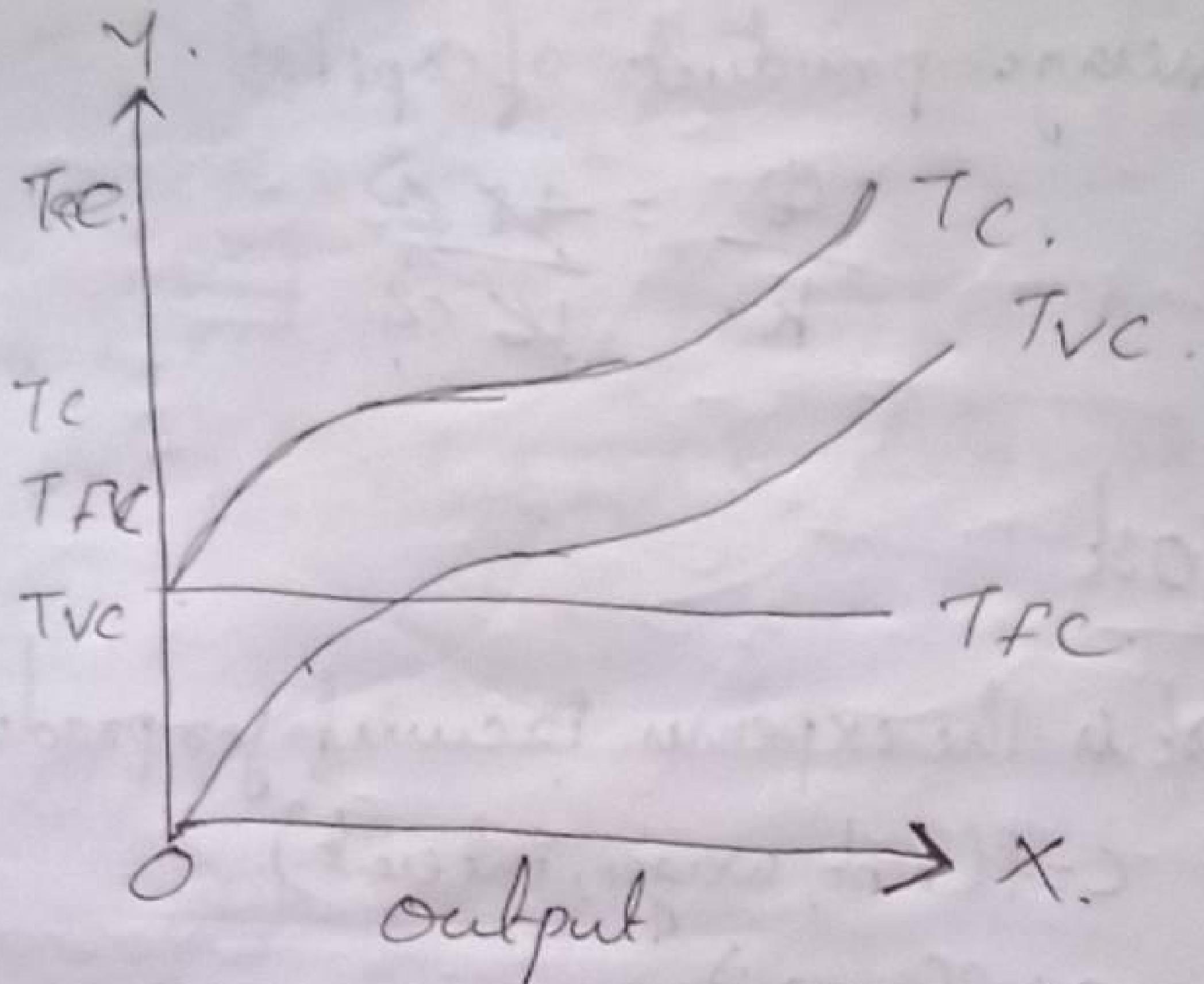
• Variable cost

• Fixed cost is the cost incurred for fixed factors such as machinery, buildings, land etc.

• Variable cost - Variable cost is the cost incurred for variable factors such as labour, raw materials etc.

$$\text{Total cost} = TFC + TVC$$

TC



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Monday

### Cost curves

#### Average cost (AC)

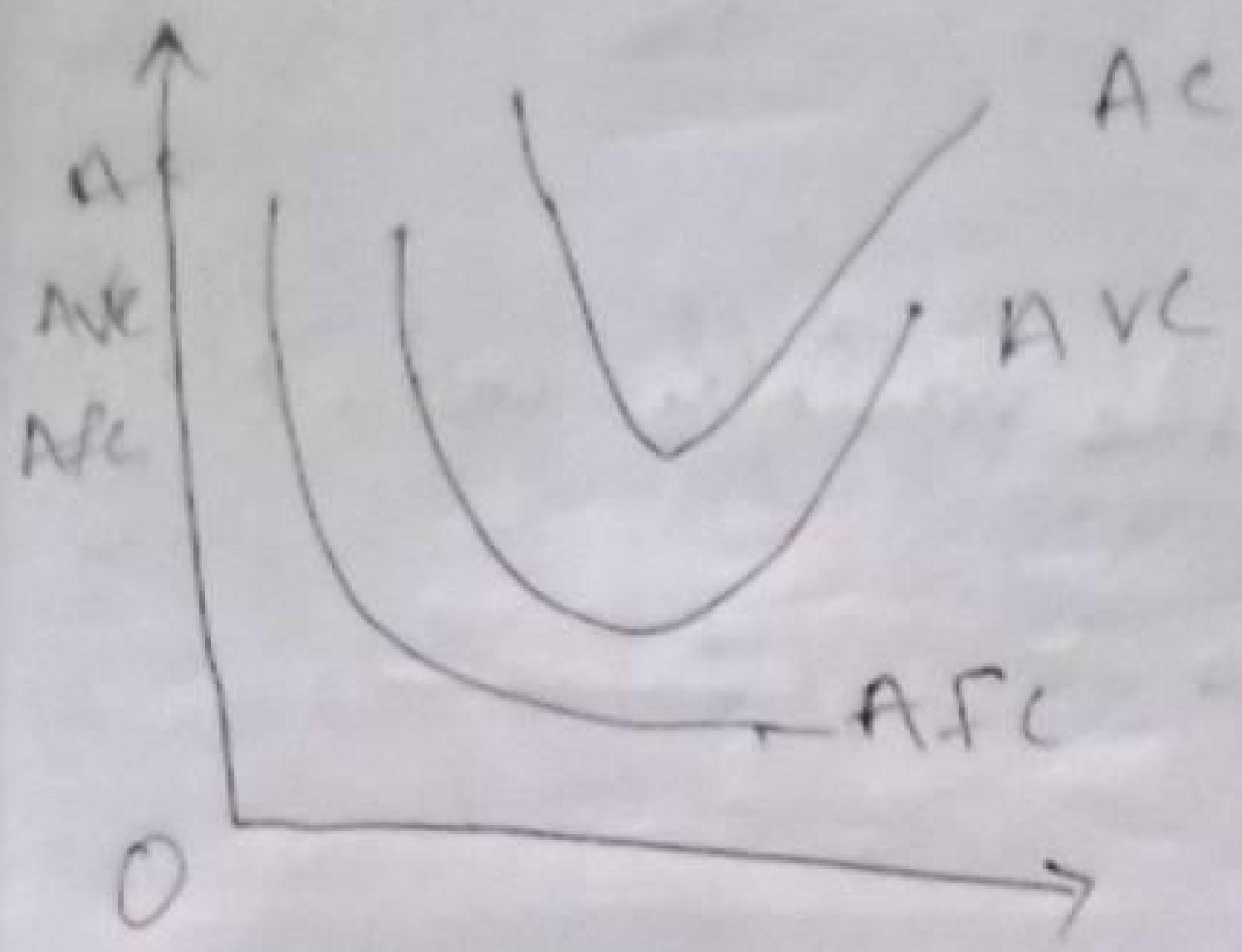
It is the cost per unit of output.

$$AC = AFC + AVC$$

$$AC = \frac{TC}{\text{Output}}$$

$$AVC = \frac{TVC}{\text{Output}}$$

$$AVC = \frac{TVC}{\text{Output}}$$



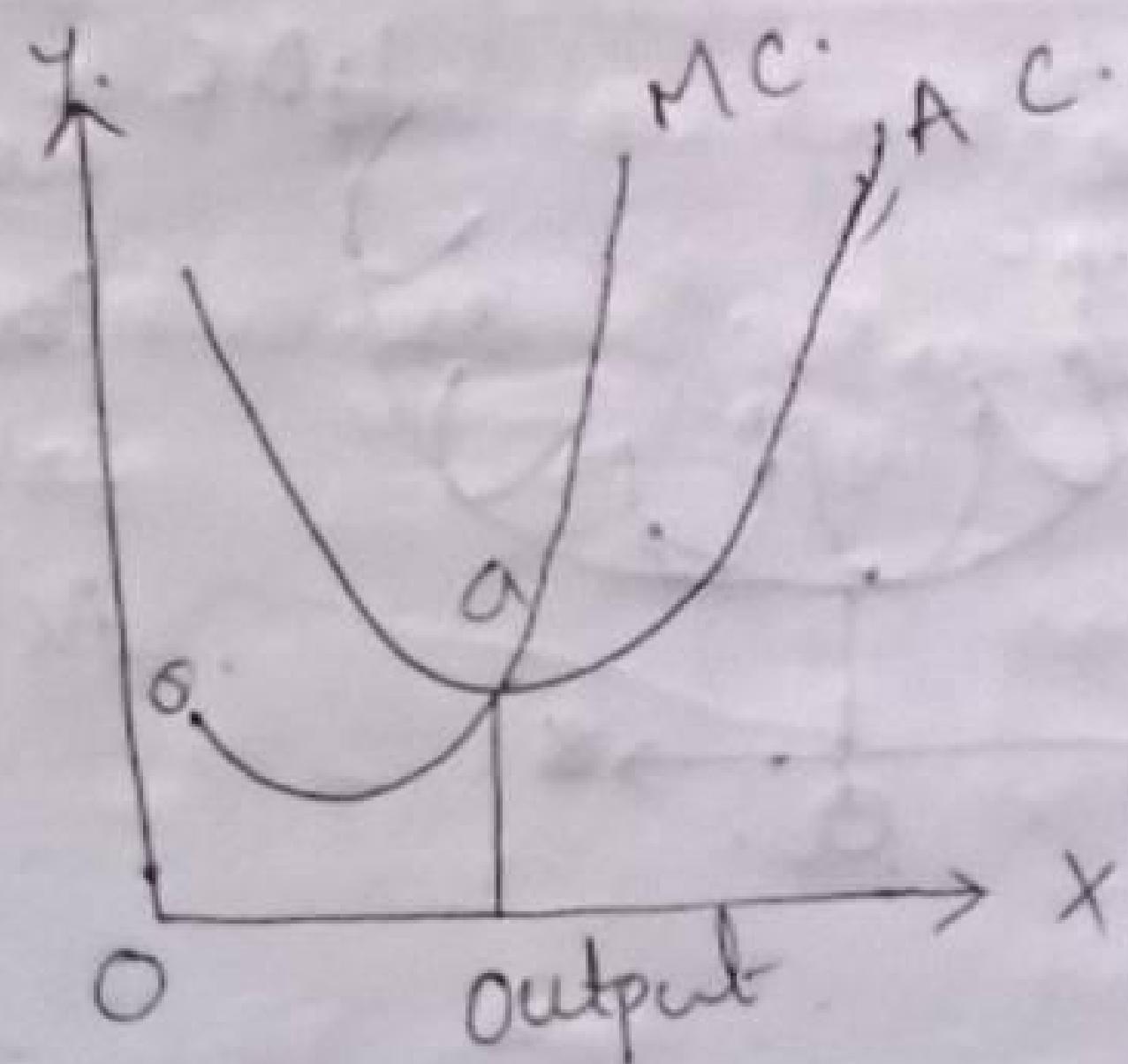
Marginal cost

It is the extra or additional cost per unit of output produced.

$$MC = \frac{\Delta TC}{\Delta Q}$$

$$\text{or } MC = TC_n - TC_{n-1}.$$

Relationship b/w AC & MC



- MC passes through the minimum point of AC

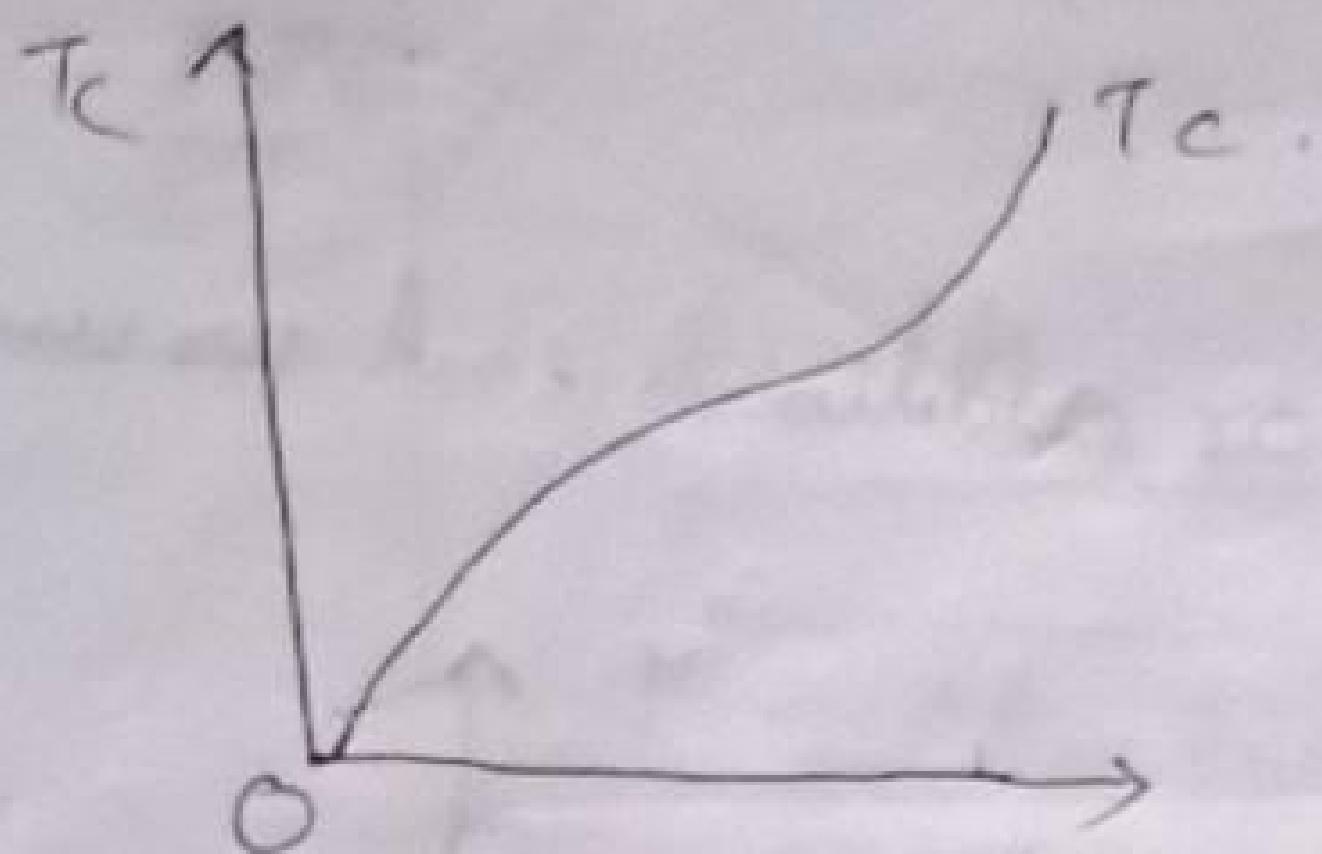
- At point 'a'  $AC = MC$

- To the right of 'a'  $MC > AC$ , to the left of 'a'  $MC < AC$ .

long-run costs

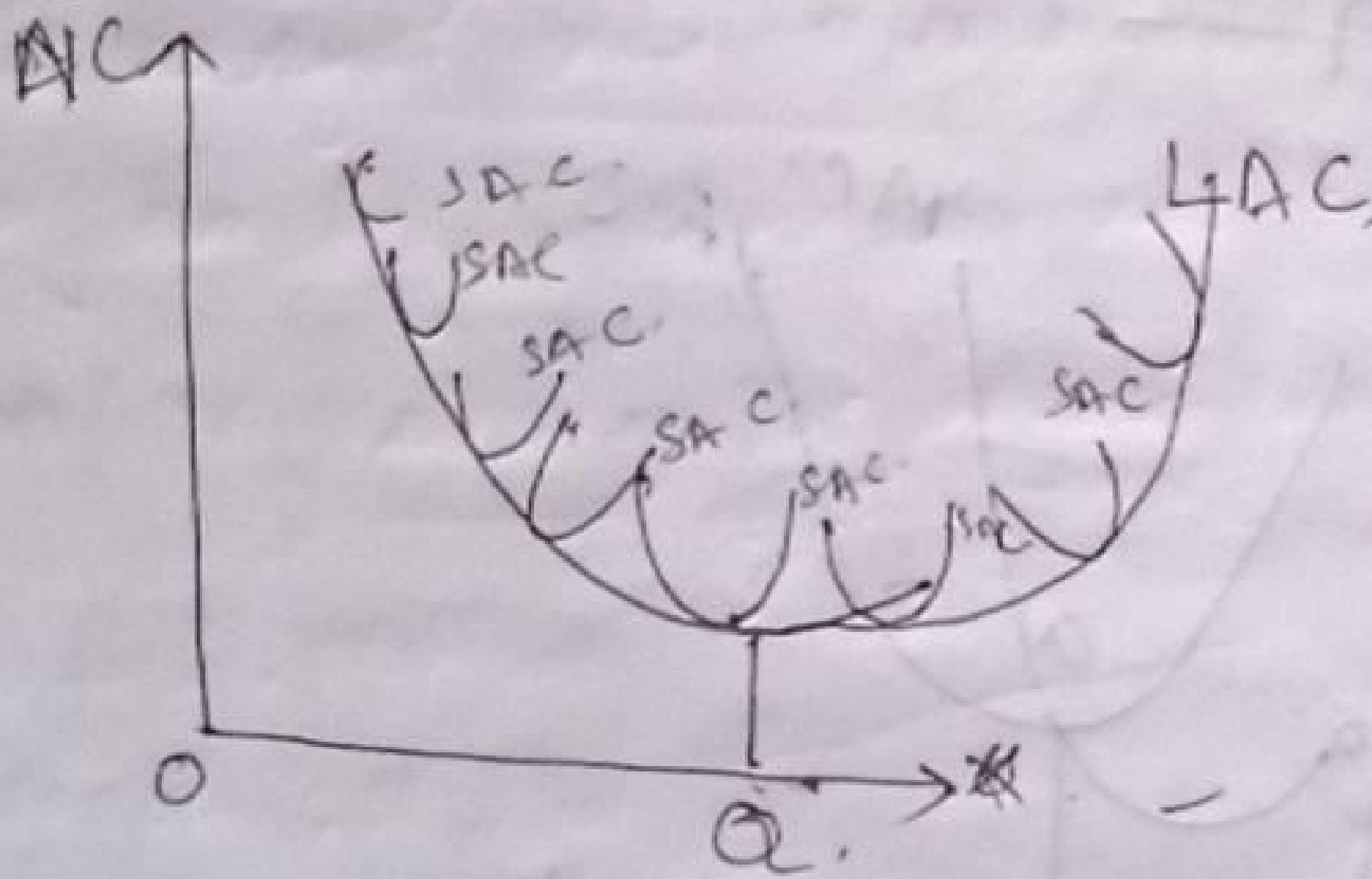
$T_C$

- $T_C$  includes only the variable cost. no fixed cost in the long-run
- $T_C = VC$



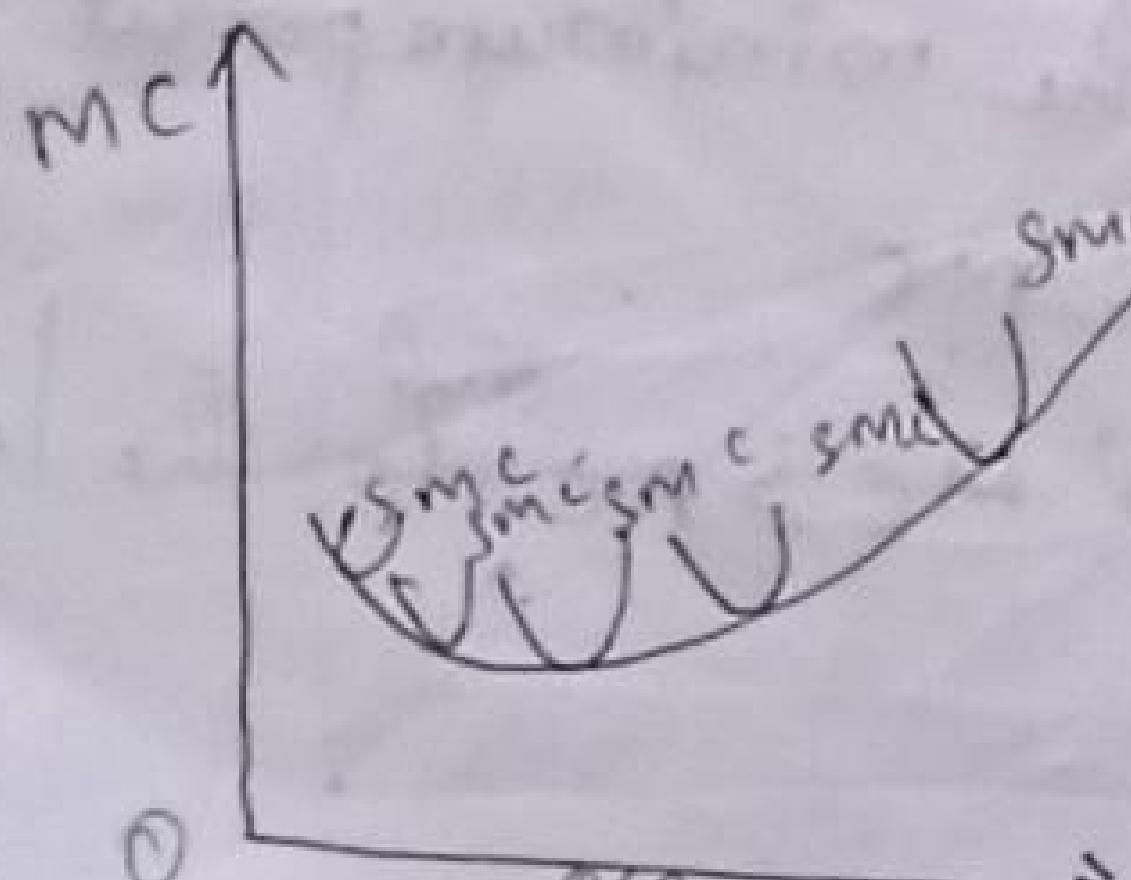
long-run AC and MC

long-run AC



long-run AC is  
Point of optimum  
cost of short-run  
AC (SAC)

long-run MC



long-run MC (LMC)  
is the point of optimum  
of short-run MC (SMC)

## Revenue

It is the income earned by selling goods.

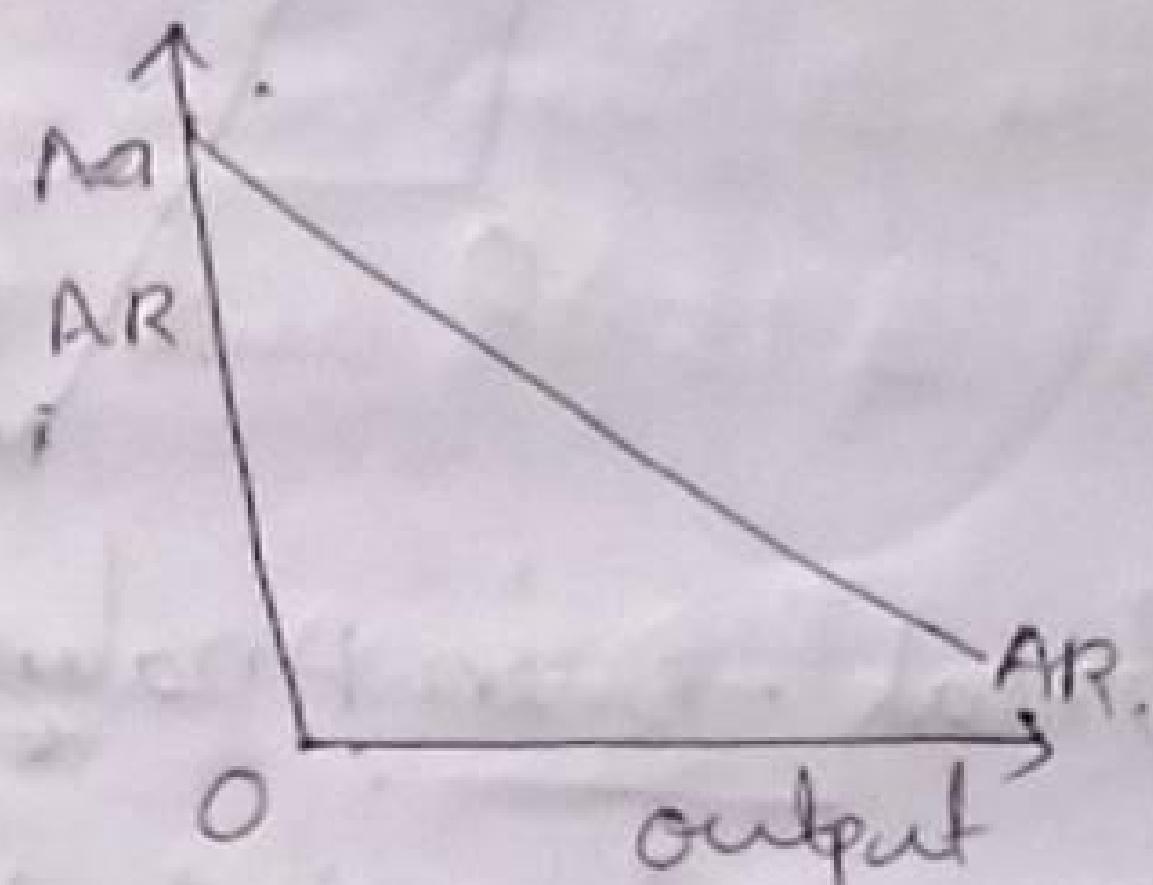
### Total Revenue (TR)

It is the total income received by selling goods and services.

### Average Revenue (AR)

It's the average income per unit of output

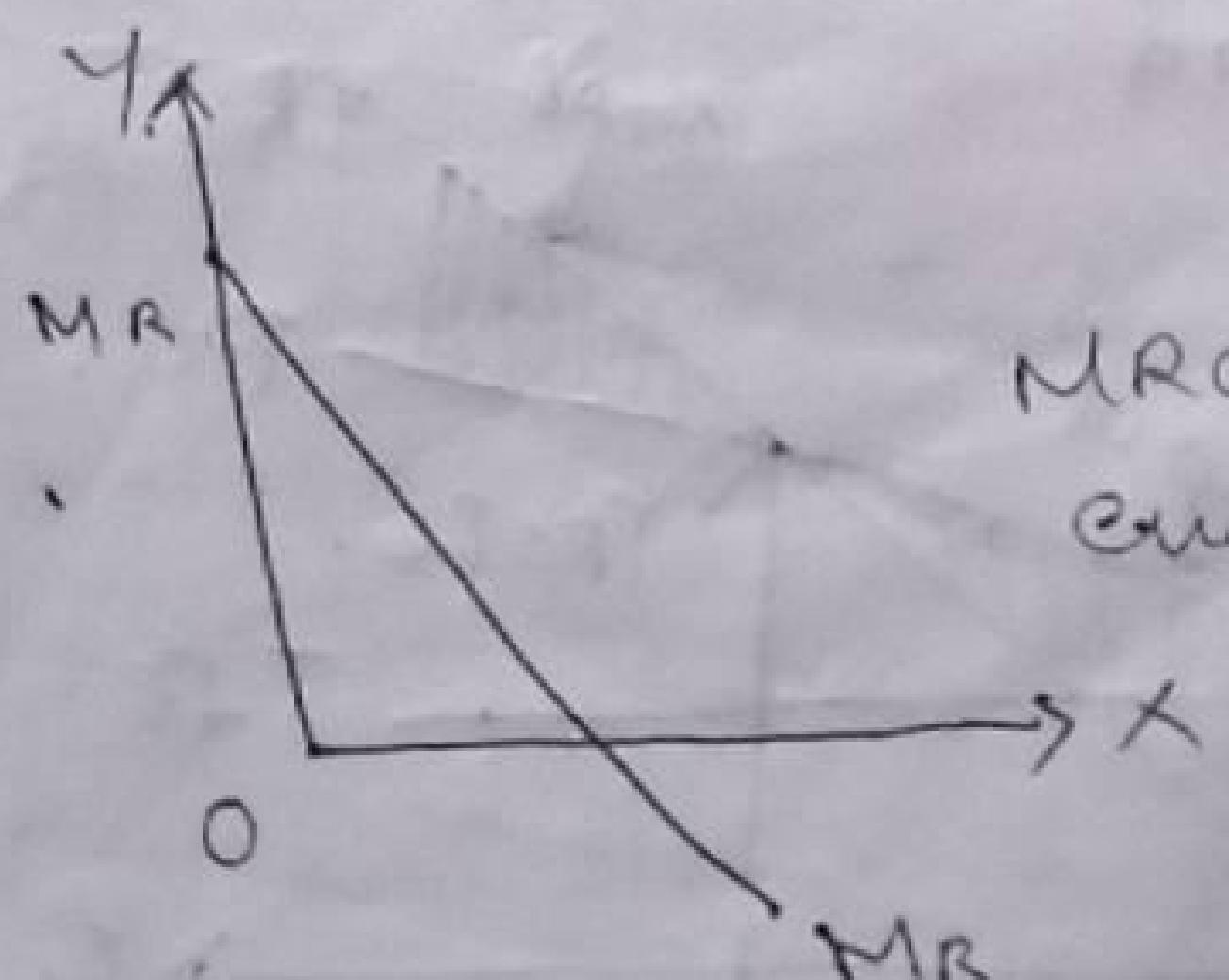
$$AR = \frac{TR}{\text{output}}$$



### Marginal Revenue (MR)

It is the revenue earned by selling an additional good.

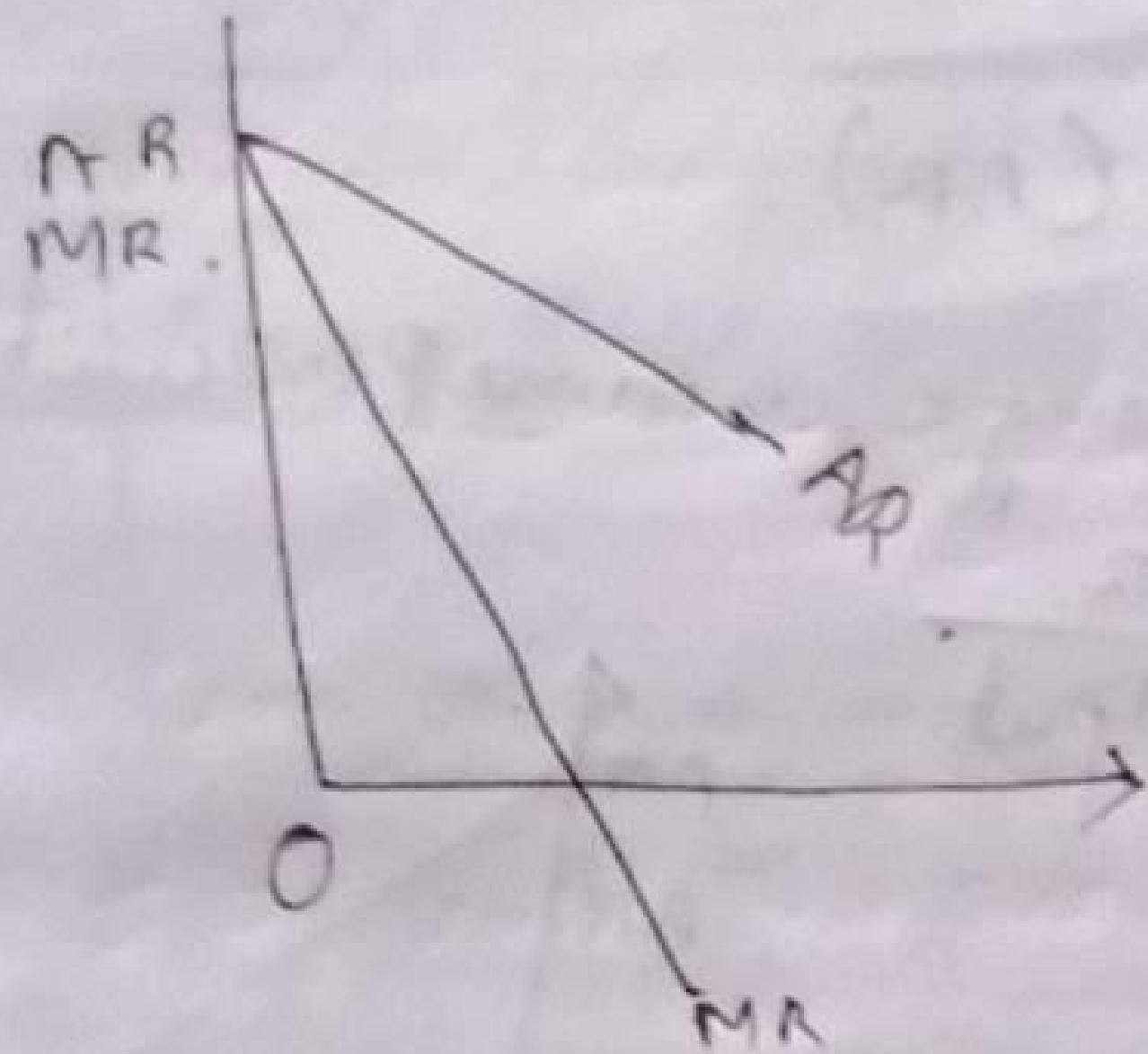
$$MR = \frac{\Delta TR}{\Delta Q} \text{ or } MR = TR_n - TR_{n-1}$$



MR curve can be zero and even negative

## Relationship b/w AR and MR

- MR can be negative
- AR is downward sloping and never touches the x-axis.

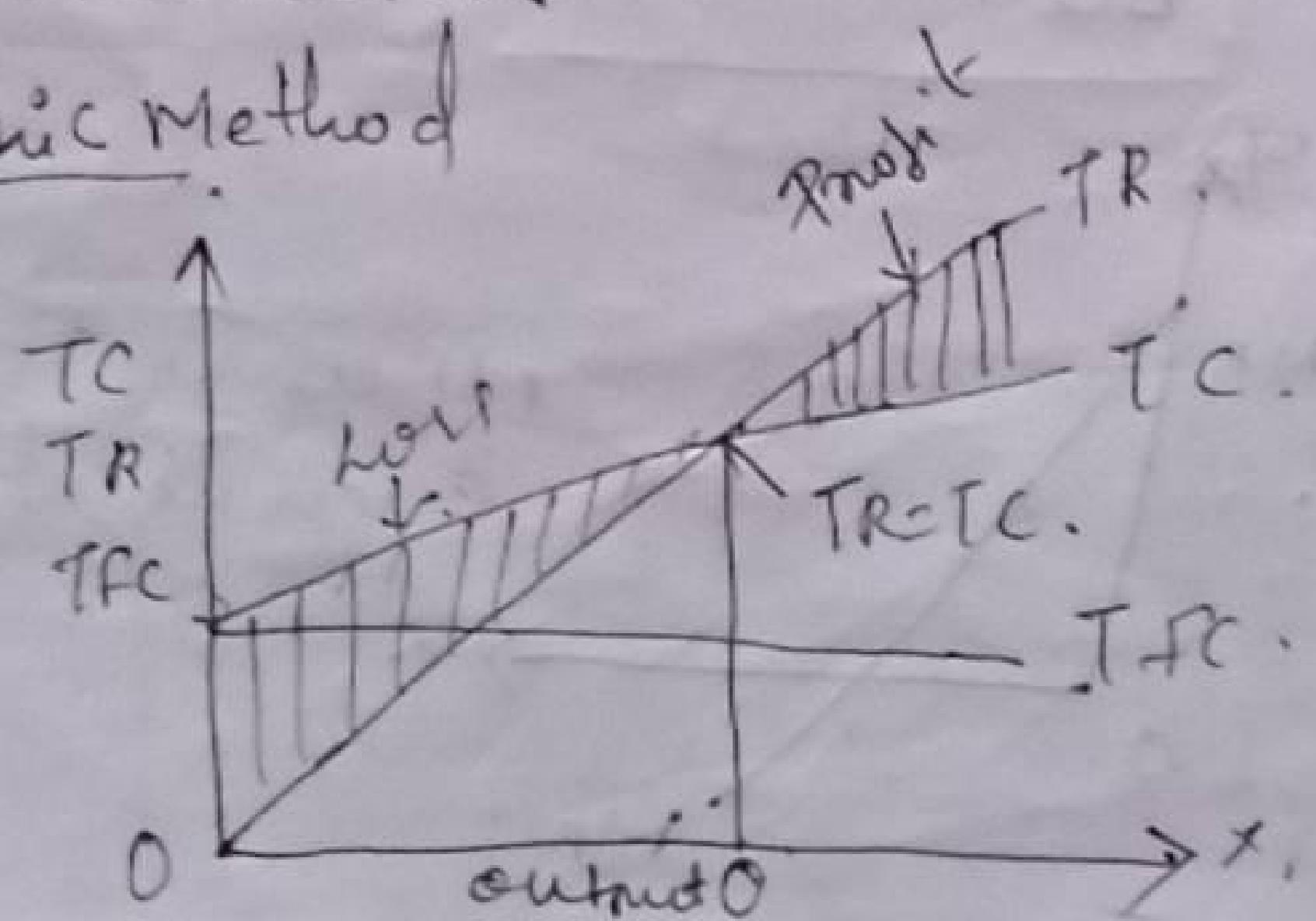


## Break-even Analysis (BEA)

- This analysis tries to understand the profit or loss of a firm using total cost and total revenue.

Two approaches for break-even analysis.

1. Graphic method
2. Algebraic method.
3. Graphic Method



## Algebraic Method

Let 'P' be the price,  $Q_b$  be the break-even quantity

$$TR = TC$$

$$TR = P \times Q_b \text{ (break-even output)}$$

$$TC = TFC + TVC$$

$$TR = TC \text{ becomes}$$

$$P \times Q_b = TFC + TVC$$

$$P \times Q_b = TFC + (AVC + Q_b)$$

Break even point  $\rightarrow TR = TC$ .

$$AVC \times Q_b$$

Break even output  $\rightarrow Q_b$

$$P \times Q_b - AVC \times Q_b = TFC$$

$$(P - AVC) Q_b = TFC$$

$$Q_b = \frac{TFC}{P - AVC}$$

Suppose a firm makes candles and every month it has to pay ₹ 3000 as rent and ₹ 3000 as interest charges. If the selling price of a candle is ₹ 5 and cost per candle is ₹ 2.00 find out the break-even level of output.

$$\text{rent} = 3000$$

$$\text{Interest} = 3000$$

$$P = 5$$

$$AVC = \text{cost per candle} = 2$$

$$TFC = 3000 + 3000 = 6000$$

$$Q_b = \text{break-even level of p.}$$

$$= \frac{TFC}{P - AVC} = \frac{6000}{5-2} = \frac{6000}{3}$$

$$= 2000$$

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## P-V ratio (Profit-volume ratio)

It is the ratio contribution to sales.

$$PV\text{ ratio} = \frac{\text{contribution}}{\text{sales}}$$

contribution = sales - variable cost.

$$PV\text{ Ratio} = \frac{S-V}{S}$$

i) If the selling price of a product is 20 and variable cost is 15 per unit. Find out the P-V ratio.

$$PV\text{ ratio} = \frac{20-15}{20} = \frac{\$15}{\$20} = \underline{\underline{0.25}}$$

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## Module - 3

### Market Structure

#### Market

Market is a place where seller and buyer meet for selling and buying goods at a price

#### Classification of Market

classification based on the following features.

1. Number of sellers present

2. Nature of the product - homogenous or heterogeneous

Homogenous product  $\Rightarrow$  There is no change difference in colour, shape, packing etc.

Heterogeneous product  $\Rightarrow$  There is difference in shape, colour, packing etc.

3) Freedom of entry and exit for firms.

4) Selling cost  $\rightarrow$  advertisement expenses.

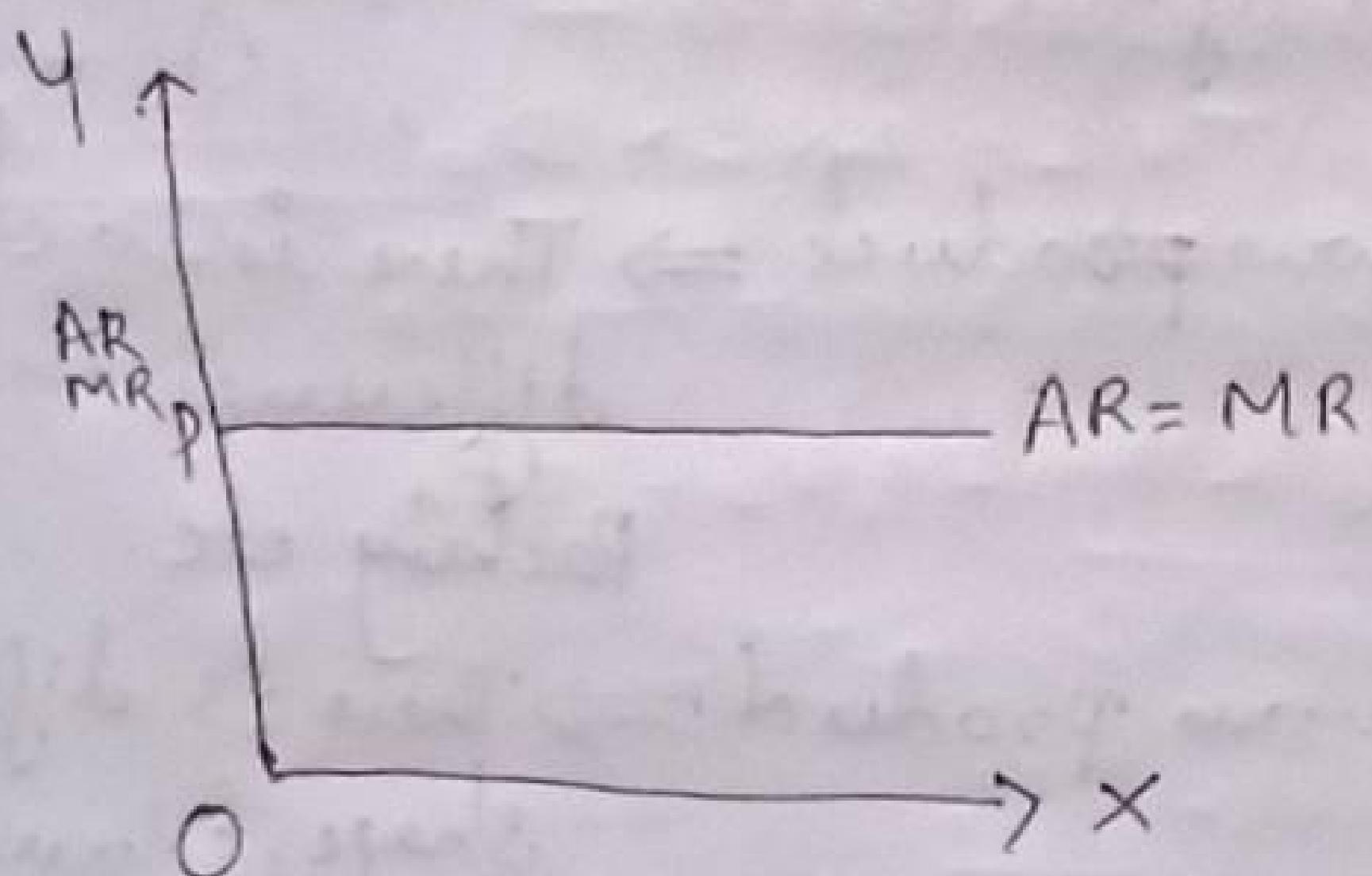
#### Type

#### Perfect competition

• perfect competition is a market structure where large number of seller and buyer dealing with homogeneous product.

## features

- 1) large number of sellers
  - 2) large number of buyers.
  - 3) products are homogeneous (identical)
  - 4) freedom of entry and exit for firms
  - 5) perfect knowledge about market conditions
  - 6) no government interference in the market.
  - 7) absence of selling cost
  - 8) firms are price takers
- AR, MR in perfect competition competition



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Two approaches

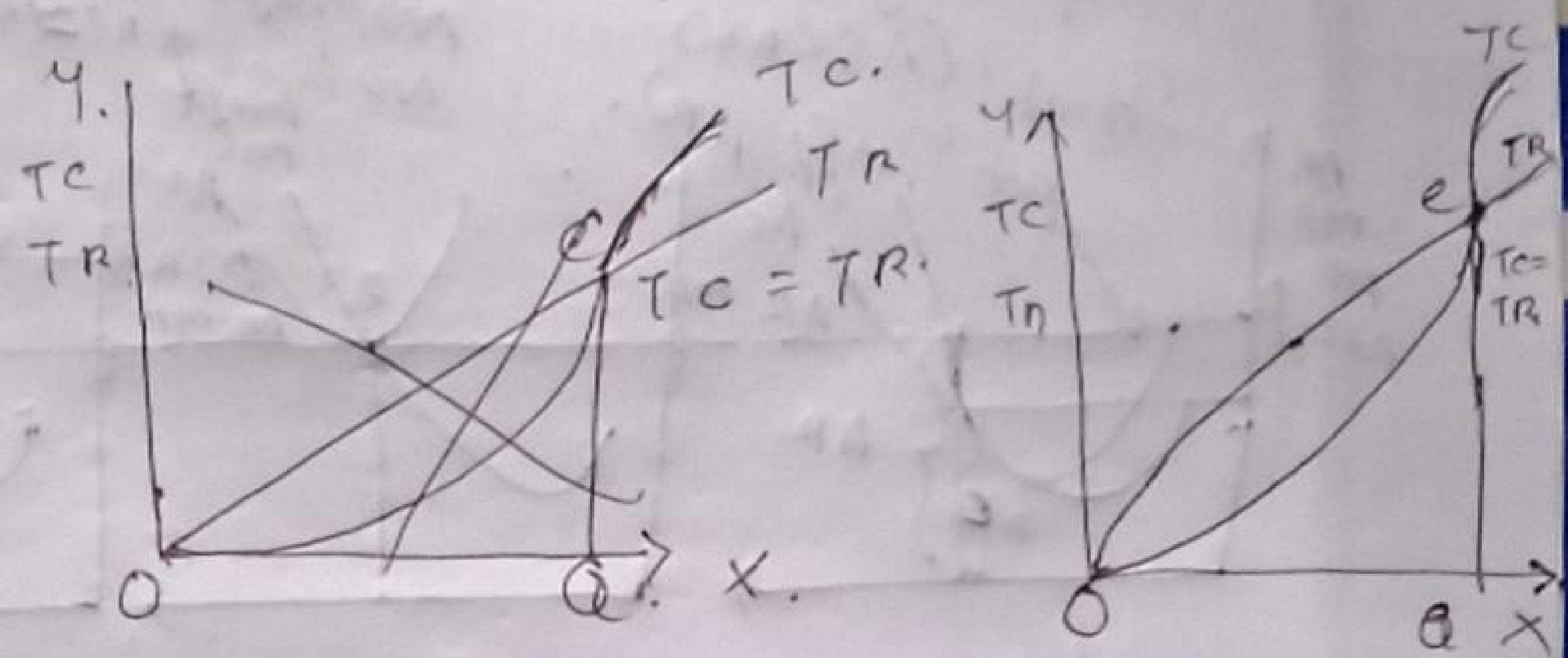
- 1) TC - TR approach
- 2) MC - MR approach.

TC - TR approach.

In this approach, equilibrium of firms is determined

on the point where  $TC = TR$ .

- No firm tries to continue produce after the point of  $TC = TR$  equality.

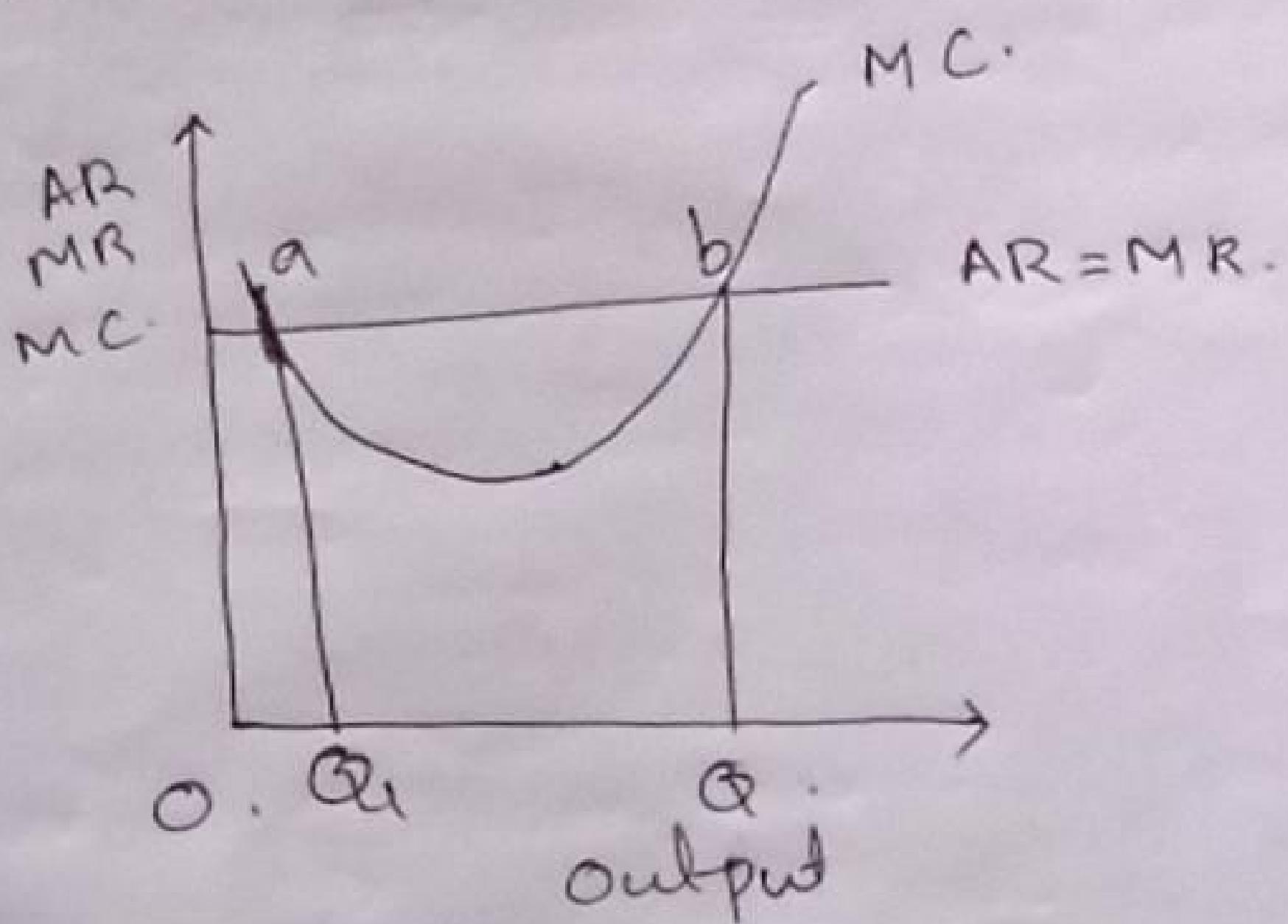


MC-MR approach

- Two conditions to be satisfied in this approach.

1)  $MC = MR$ .

2) MC curve should cut MR from below.



• In both points 'a' and 'b',  $MC = MR$

• Equilibrium point is considered as 'b'.

In 'b',  $MC = MR$  and  $MC$  into  $MR$  from below.

Equilibrium of firms under Perfect competition conditions:

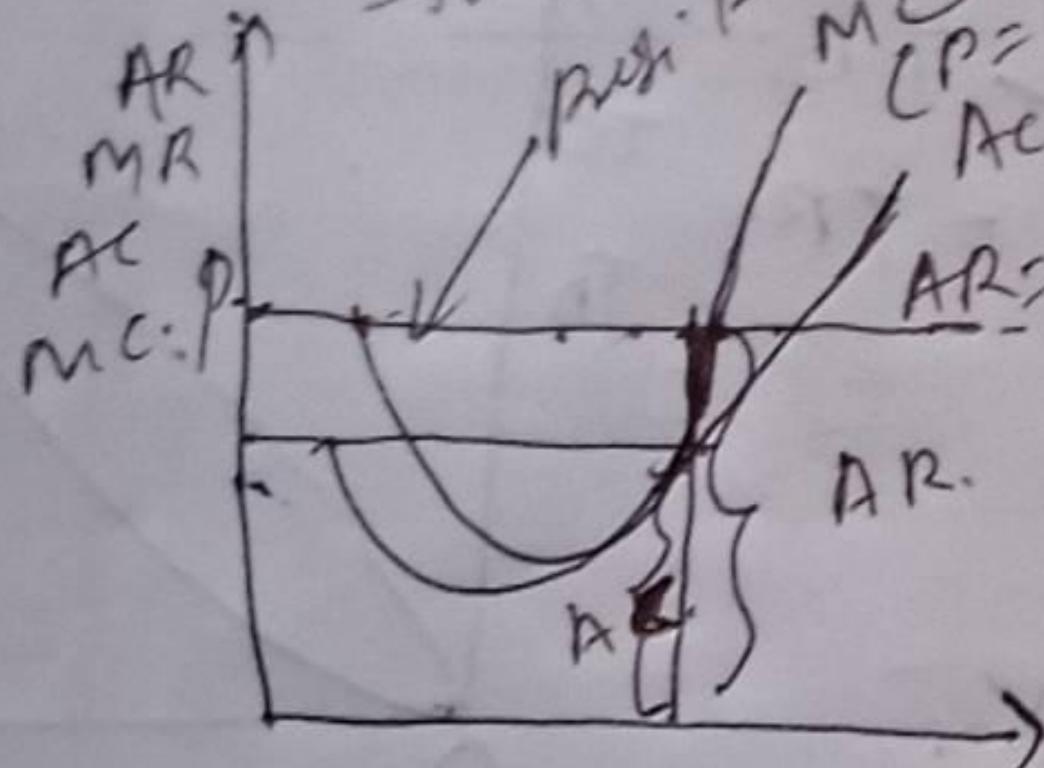
1)  $MC = MR$

2) MC curve into MR curve from below.

(slope of  $MC >$  slope of  $MR$ ).

Profit ( $AC < AR$ ).

Loss ( $AC > AR$ ).



Profit ( $AC > AR$ , no profit/loss).

Loss ( $AC < AR$ ).

No Profit

Profit ( $AC > AR$ ).

Loss ( $AC < AR$ ).

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