Economics

3/1/21

Definition:

Economics : 1. Micro → নিচের সিদ্ধান্ত
2. Macro → পুরো ~~অর্থ~~ অর্থনীতির সিদ্ধান্ত

Some Basic Concepts:

Commodity, Product, Needs, Wants, Utility, Consumption

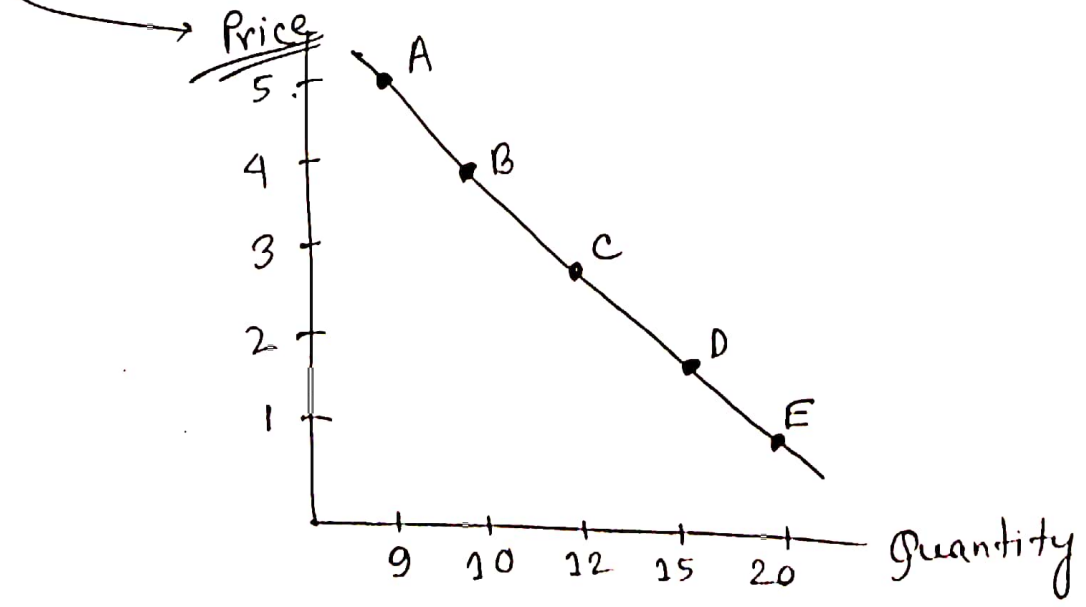
Factors of Production

Land, Labor, Capital, Organization

Definition of Demand

Law of Demand

Demand schedule and Demand Curve



Price ↑ Real Income ↓ Demand ↓

* Why is demand curve downward sloping?

→ Income effect

→ Substitution effect

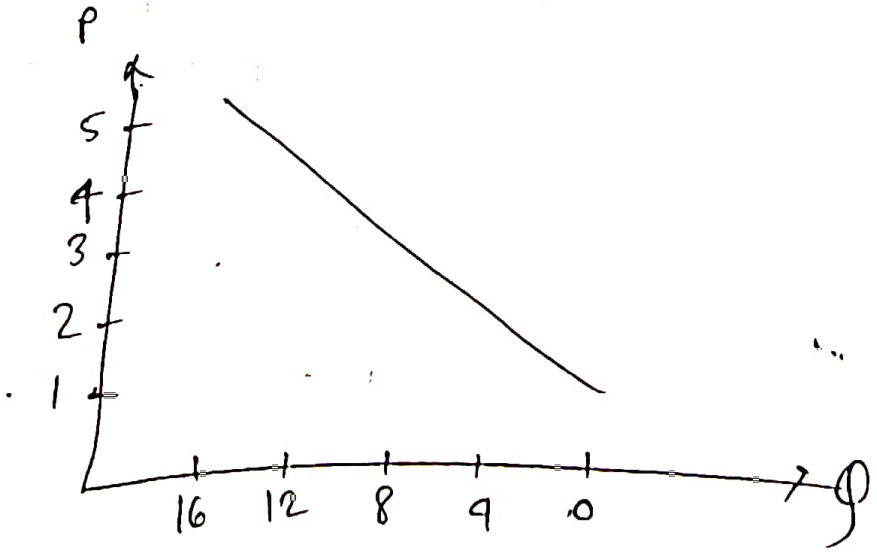
Demand function

$$Q = f(P)$$

$$Q = a - bP$$

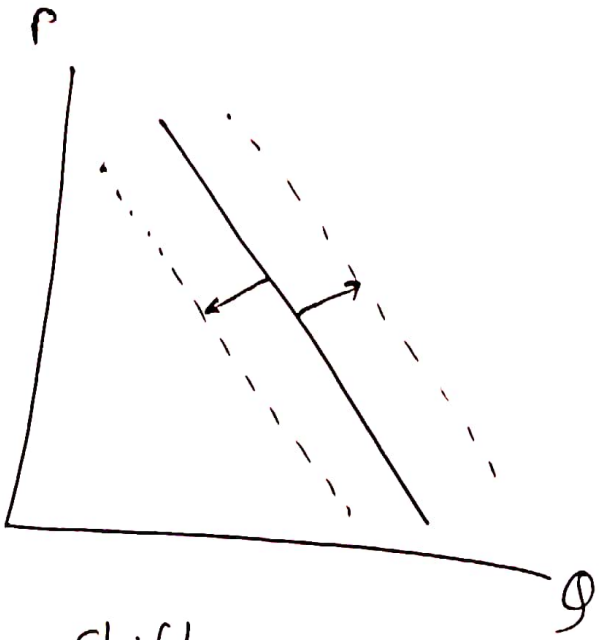
Example: $Q = 20 - 4P$

Price	Quantity
1	16
2	12
3	8
4	4
5	0



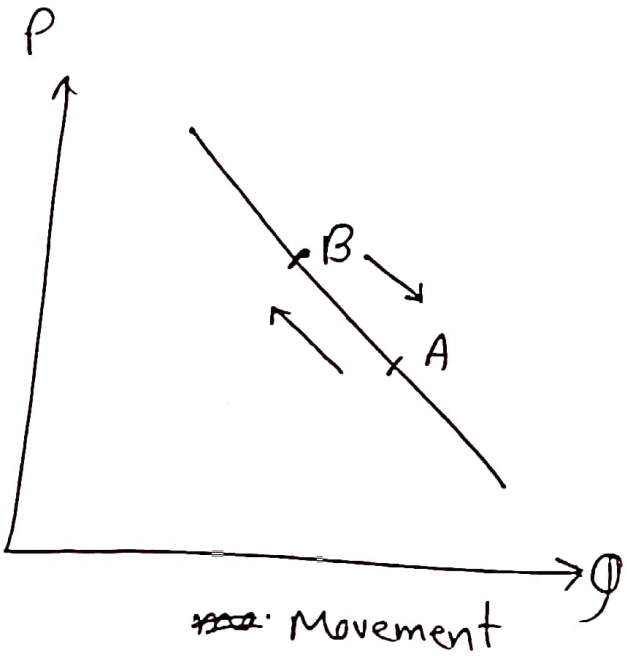
Determinants of Demand

Shift and the movements of the Demand Curve



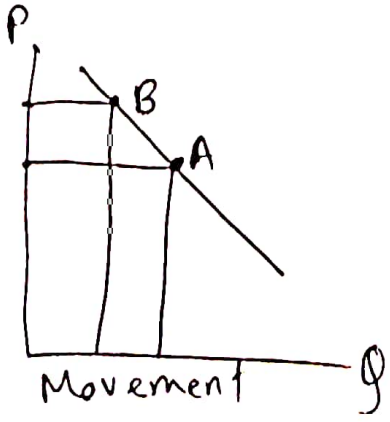
Shift

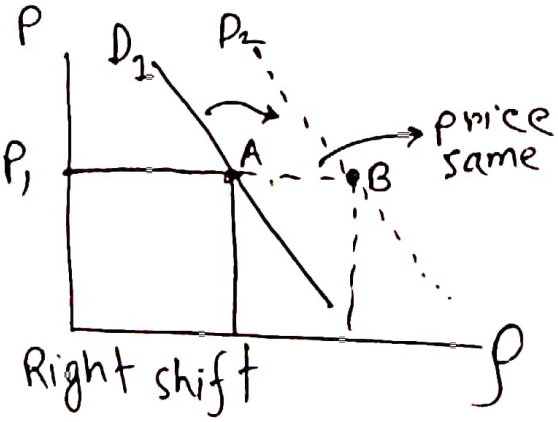
Price same থেকে
Demand curve shift
করলে।

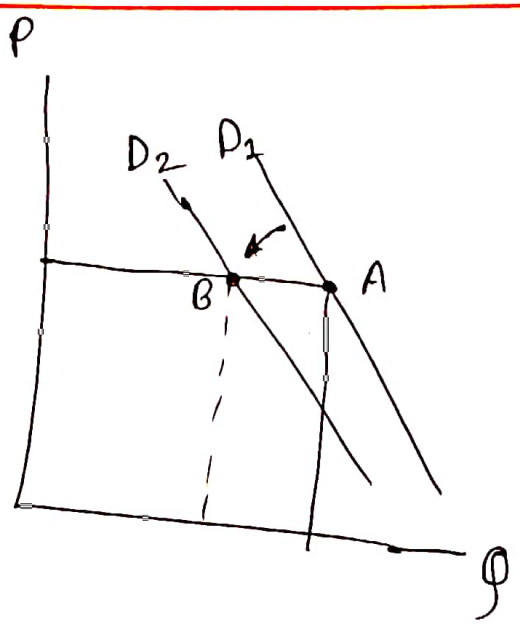


Movement

Same curve এ
এক point থেকে আরেক
point এ যাওয়া।



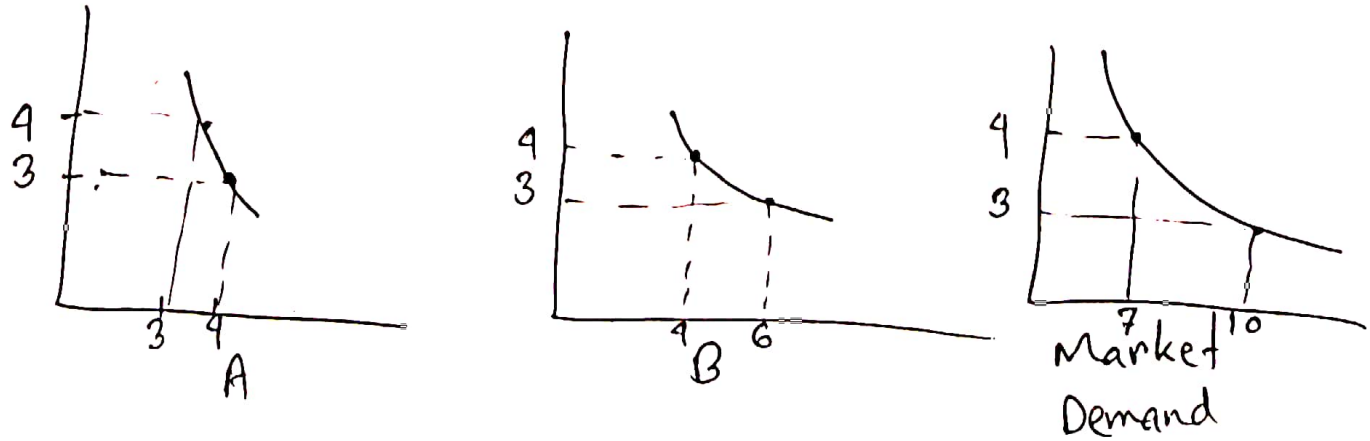




Market Demand

Market Demand Schedule

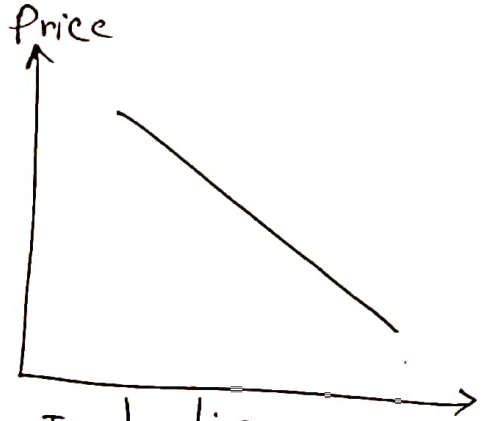
Market / Aggregate Demand Curve



Elasticity of Demand

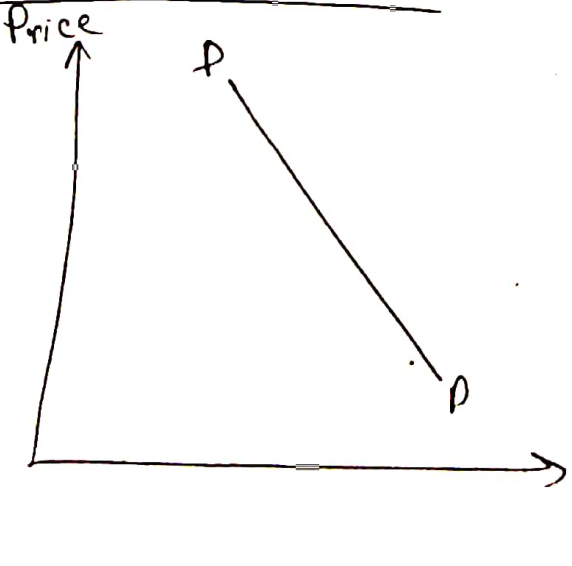
$$\text{Elasticity of demand} = \frac{\text{percentage change in quantity demanded}}{\text{percentage change in determinants of demand}}$$

Relatively Elastic Demand



$e > 1$

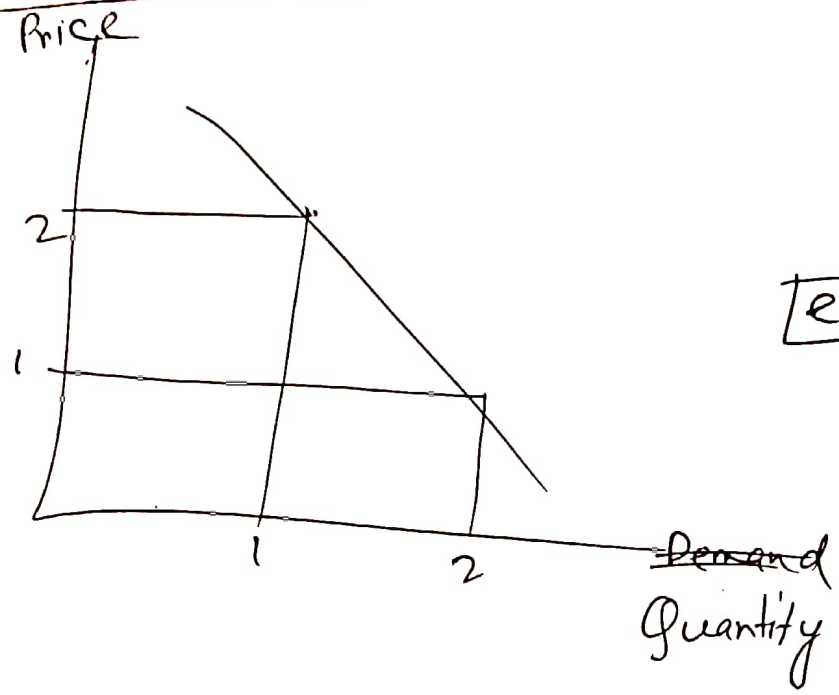
Relatively Inelastic



$e < 1$

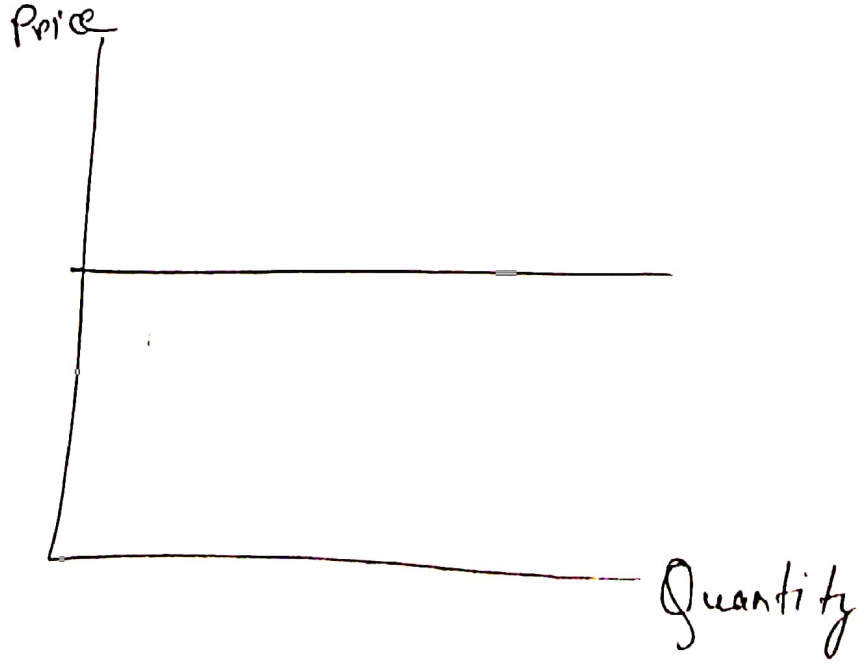
elasticity

Unitary Elastic Demand



$e = 1$

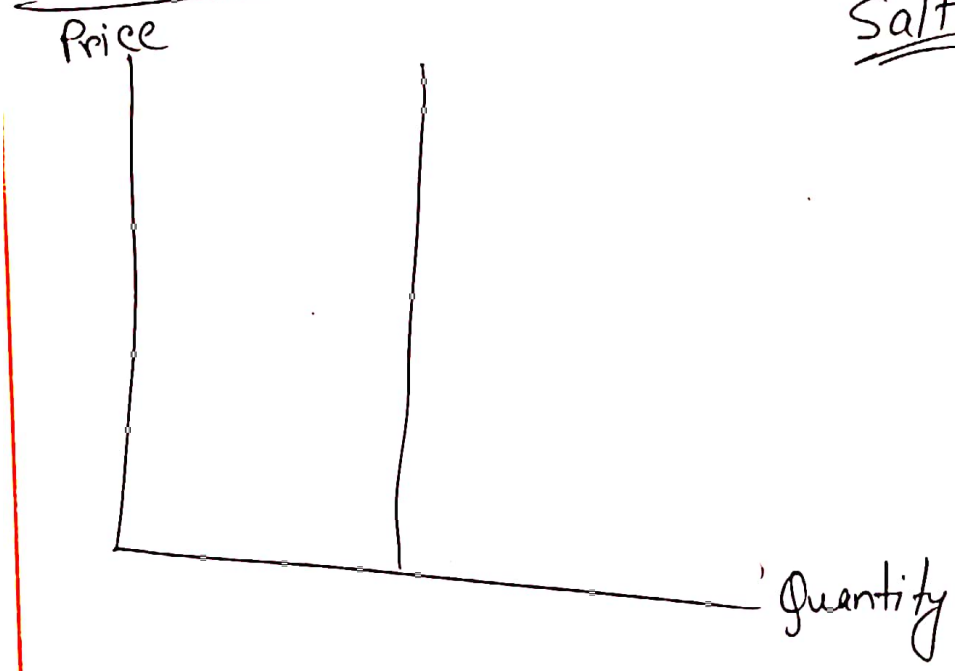
Perfectly Elastic



$e = \infty$

Perfectly Inelastic

Example
Salt, Drugs



$e = 0$

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

$$\text{Price Elasticity of Demand} = \frac{(Q_2 - Q_1)/[(Q_2 + Q_1)/2]}{(P_2 - P_1)/[(P_2 + P_1)/2]}$$

$\Delta Q = Q_2 - Q_1$

$\Delta P = P_2 - P_1$

$P_1 = \$2.00$ $Q_1 = 10$

$P_2 = \$2.20$ $Q_2 = 8$

$$e = \frac{(8-10)/[(18)/2]}{(.2)/[4.2/2]}$$

$$= \frac{(-2)/9}{(.2)/(2.1)}$$

$$= -2.33$$

$$e = (dQ/dP) * (P/Q)$$

$$= (-2/.20) * (2.20/8)$$

$$= -2.75$$

$|e| = 2.3$

$\boxed{e > 1}$

This product's demand is relatively ilastic.

(Math)

Q	P
10	7
10	8

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Income Elasticity of Demand:

Income Elasticity of Demand:

$$= \frac{\text{Proportionate change in Demand}}{\text{Proportionate change in Income}}$$

i.e

$$\text{Income Elasticity of Demand} = \frac{\Delta q}{q} \div \frac{\Delta y}{Y}$$

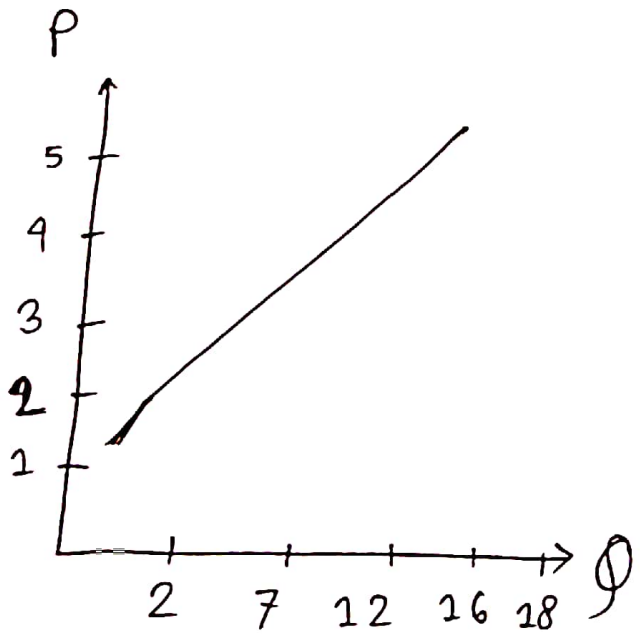
$$= \frac{\Delta q}{\Delta y} \times \frac{Y}{q}$$

Supply

Supply schedule and Supply curve

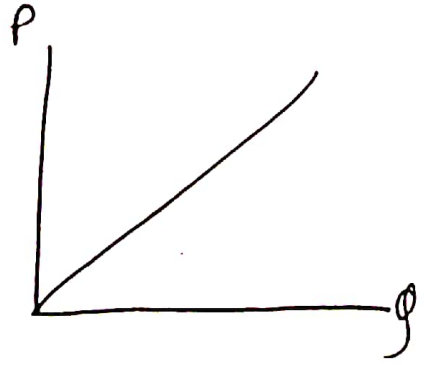
#

Price	Quantity
1	2
2	7
3	12
4	16
5	18



~~Supply cu~~

Supply Curve



Ex: $Q = 4 + 3P$

Determinants of Supply

Equilibrium Analysis

Equilibrium in a market

Demand	Price	Supply
20	1	1
15	2	7
12	3	12
10	4	16
9	5	18

Problem:

Demand $d = 200 - 10P$

$S = -50 + 10P$

i) $S = D \Rightarrow 200 - 10P = -50 + 10P \Rightarrow P = 12.5$

Demand $D = 200 - 10P$

$= 200 - 10 \times 12.5$

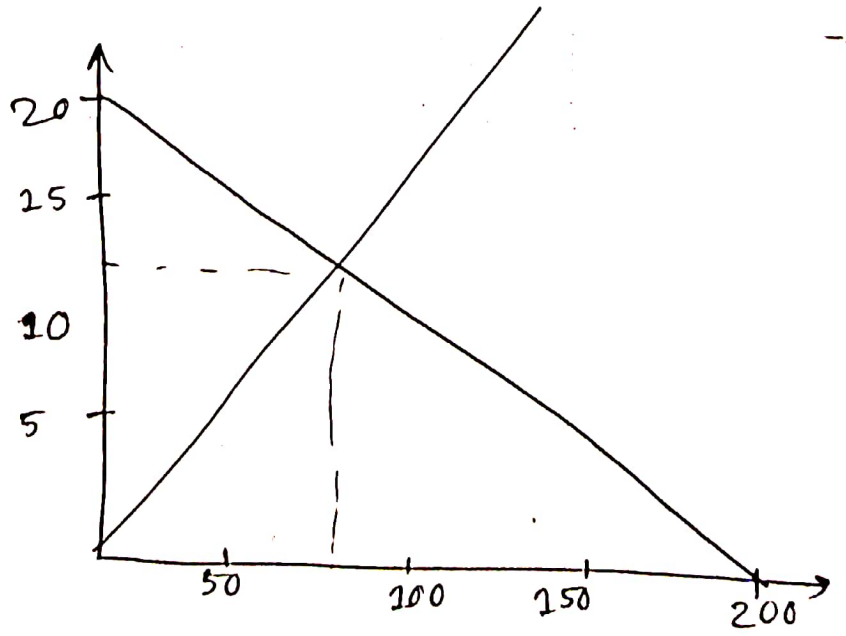
$= 75$

∴ Market clearing price $(p) = 12.5$ tk

Market clearing qty $(q) = 75$ units

ii) If the market price is decreased to TK 9. per unit, then the supply curve ~~stop~~ is downward sloping.

iii)



Market Equilibrium chart

Economics

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Utility: denotes satisfaction

Cardinal and Ordinal utility analysis:

Cardinal utility: ranking 1, 2, 3, 4...

Ordinal utility: ranking 1st, 2nd, 3rd...

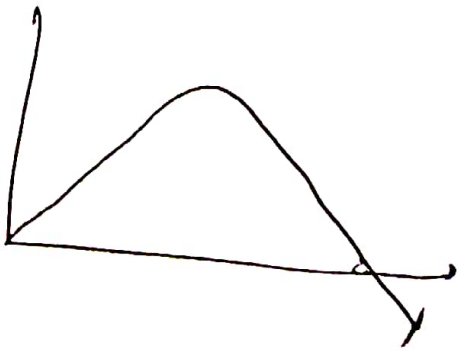
Total Utility: total satisfaction

Merginal Utility: extra satisfaction

Law of diminishing marginal utility:

continue কোন good consume করলে

satisfaction level



প্রথমে বাড়বে, পরে কমতে থাকবে

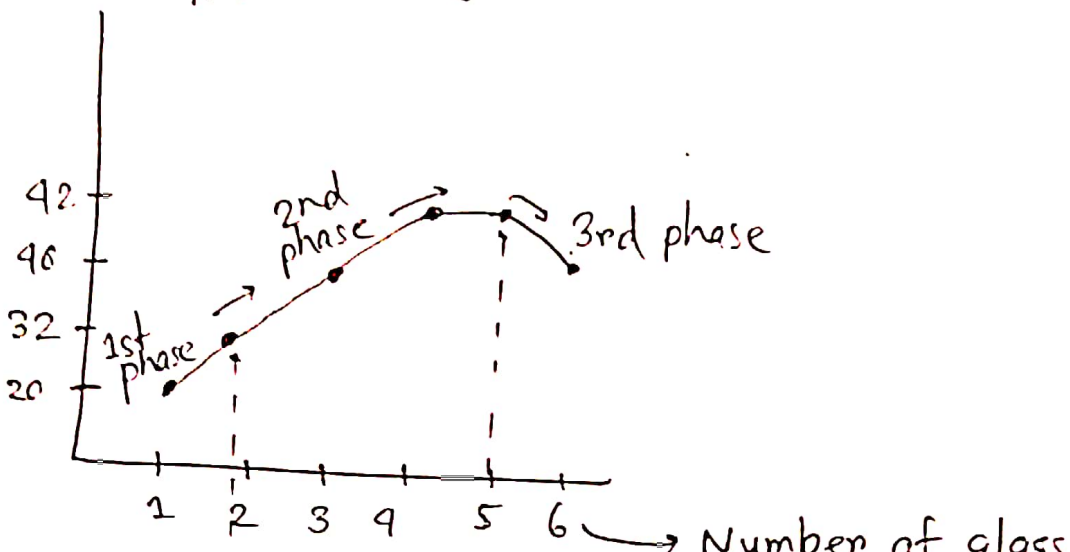
Assumptions:

5 টা things constant থাকতে হবে।

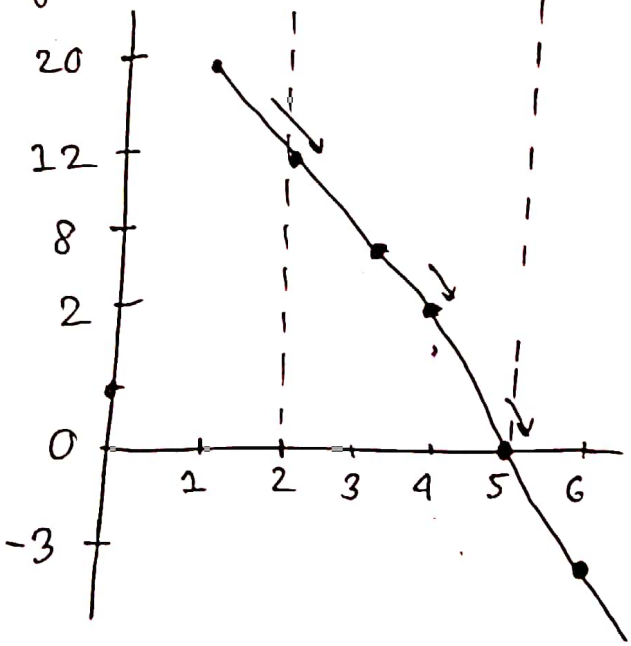
Units	Total Utility	Marginal Utility
1st glass	20	20
2nd glass	32	32 - 20 = 12
3rd glass	40	40 - 32 = 8
4th glass	42	42 - 40 = 2
5th glass	42	42 - 42 = 0
6th glass	39	39 - 42 = -3

• satisfaction level

Total Utility (TU)



Merginal Utility (MU)



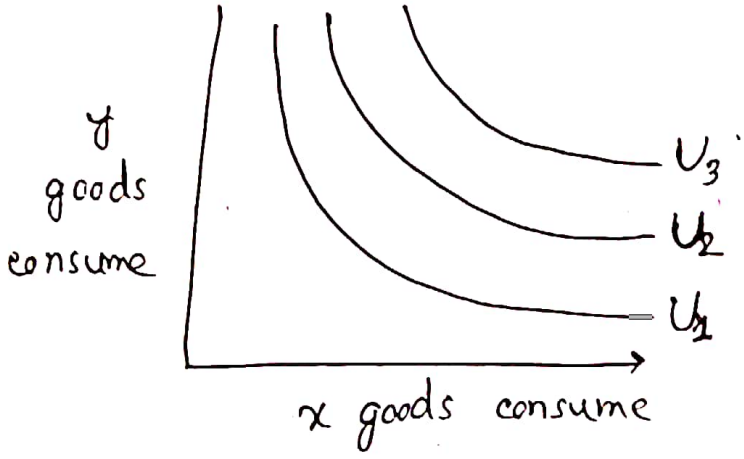
1st phase: TU ↑ MU ↓

2nd phase: TU (Max) MU (= 0)

3rd phase: TU ↓ (but positive) MU ↓ (Negative)

Limitations of the Law:

Indifference Curve:

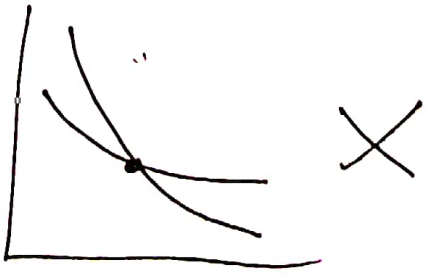


Properties of Indifference Curves

1. negatively sloped

2. convex to the origin

3. cannot intersect



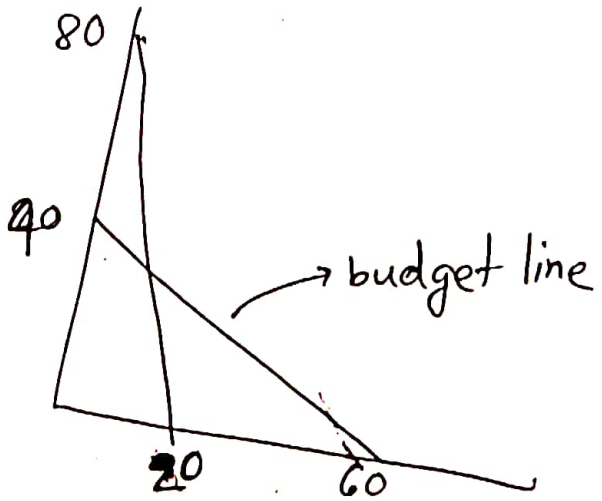
Budget Constraint Line:

$M = P_x X + P_y Y$

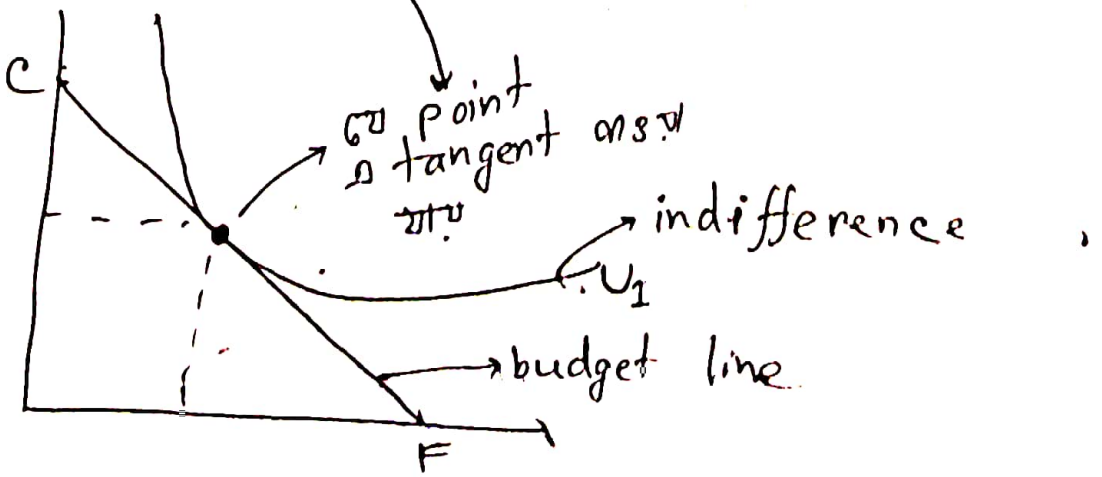
- M → Income (remain same)
- $P_x X + P_y Y$ → Amount of purchase of two commodity
- P_x, P_y → Price of given commodity

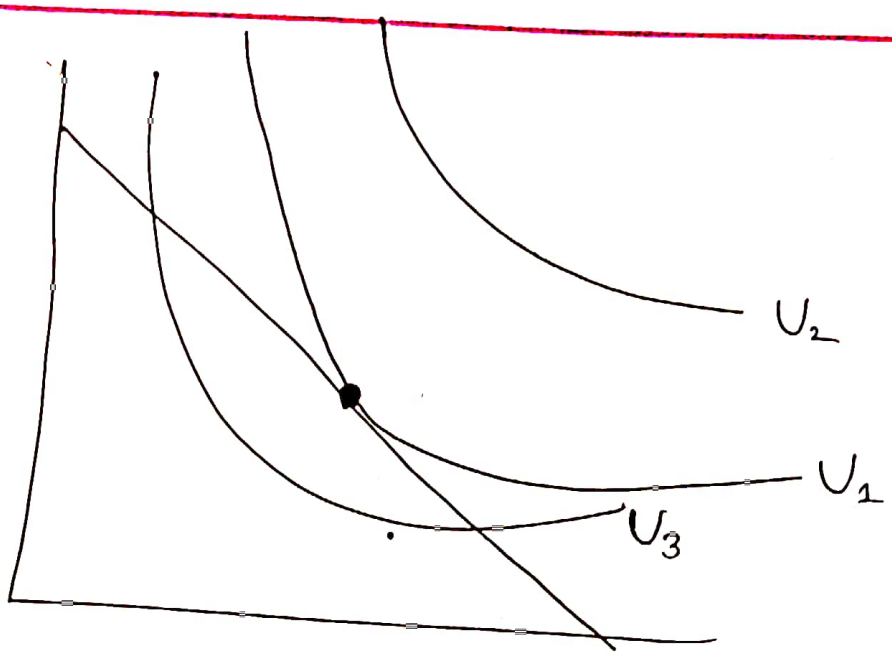
$100 = 20 + 80$

$100 = 40 + 60$



Consumer Equilibrium:



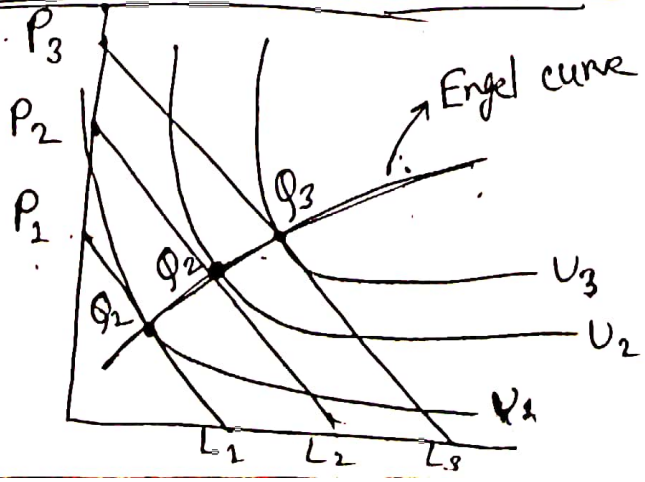


U_3: budget line এর নিচে, কিছু goods unused থেকে যাবে। budget line কে intersect করে।

U_2: budget line এর অনেক উপরে। satisfaction level অনেক বেশি। বাজেট সম্ভব না। tangent পাওয়া যাবে না budget line এর সাথে।

~~U_3, U_2~~

Income-Consumption Curve (ICC)



আমাদের budget line যদি বাড়তে থাকে বা কমতে থাকে।

Concept of Cost:

Total Cost = Total Fixed Cost + Total Variable Cost

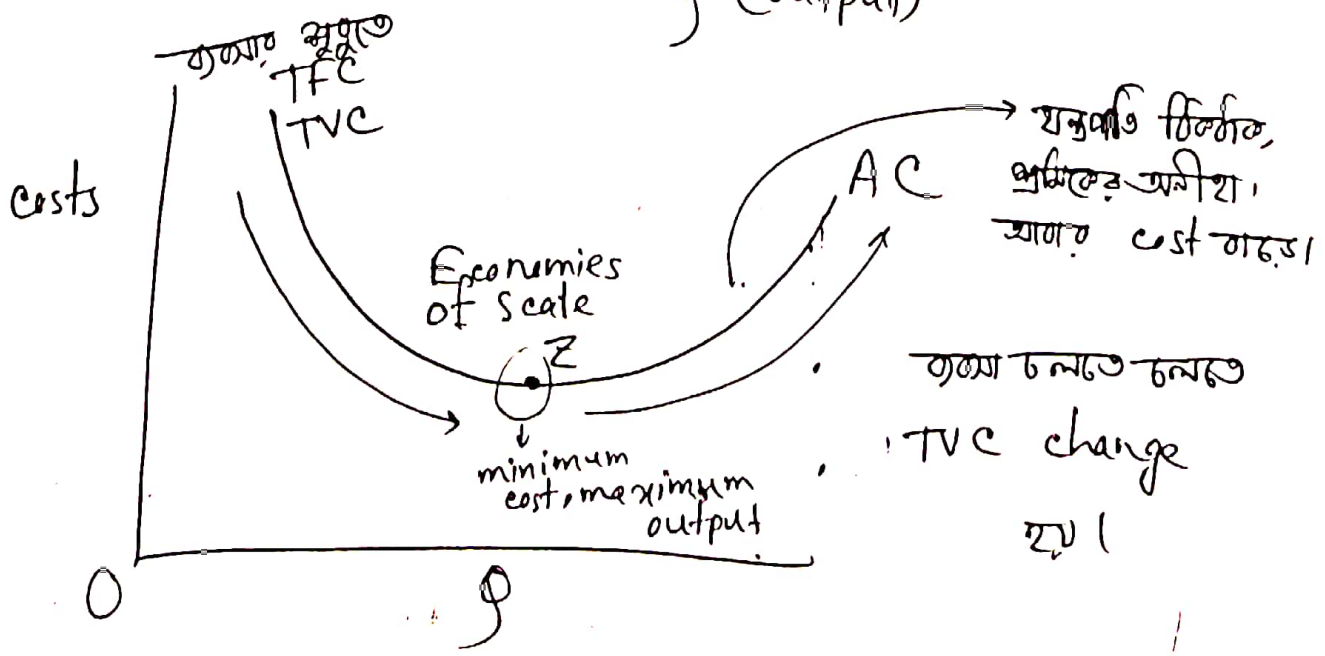
↓ ↓

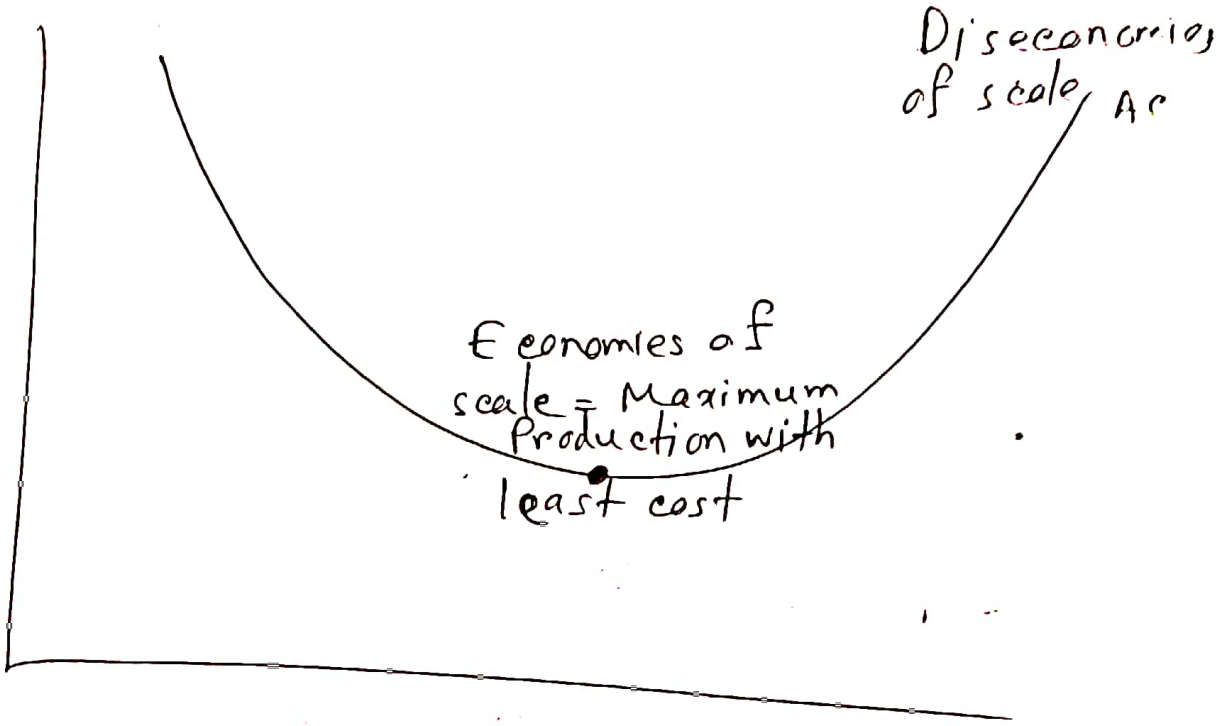
Production এ যাওয়ার আগের খরচ

change in direct proportion

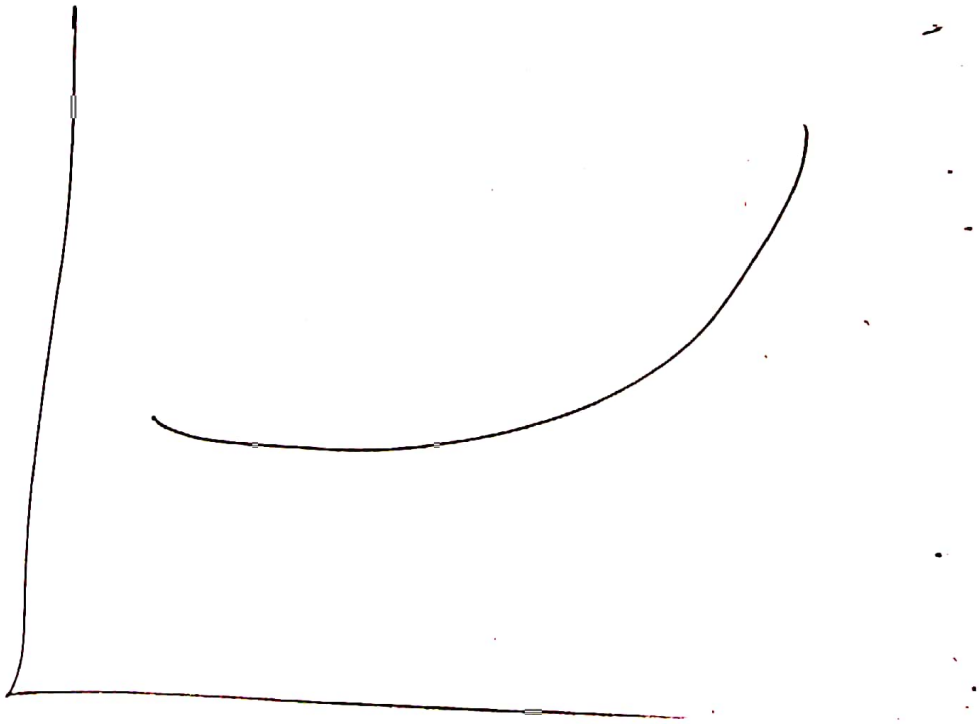
$$\text{Average Fixed Cost} = \frac{\text{Total fixed cost}}{Q(\text{output})}$$

$$\text{Average Cost} = \frac{\text{Total Cost}}{Q(\text{output})}$$





Marginal Cost: (MC = TC (Now) - Previous Total cost)



Problem 1:

Numerical Example

(TFC+TVC) (TFC/Q) (TVC/Q) (TC/Q) $\left(\frac{dTC}{dQ}\right)$

Q	TFC	TVC	TC	AFC	AVC	AC	MC
0	100	0	100	–	–	–	–
1	100	20	120	100	20	120	20
2	100	37	137	50	18.5	68.5	17
3	100	52	152	33.33	17.33	50.67	15
4	100	80	180	25	20	45	28
5	100	120	220	20	24	44	40
6	100	165	265	16.67	27.5	44.17	45

MC = Total Cost Now
- Total Cost Previous

Problem 2:

Question

Q	TC	TFC	TVC	AC = TC/Q	AFC = TFC/Q	AVC TVC/Q	MC = dTC/dQ
0	120						
1							
2				265			
3			269				
4				161			
5							
6			525				
7				120			
8			768				

Economics

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Theory of Production

Inputs: Land, labour, capital, thechnology

Outputs: Soap, car, etc.

Factors of Production

Land; Labour, capital. Organization

Production function

functional relationship between inputs and outputs

$Q = f$ (Land, Labour, Capital, Organization, Technology)

↓

(output)

Inputs

i) fixed

ii) Variable

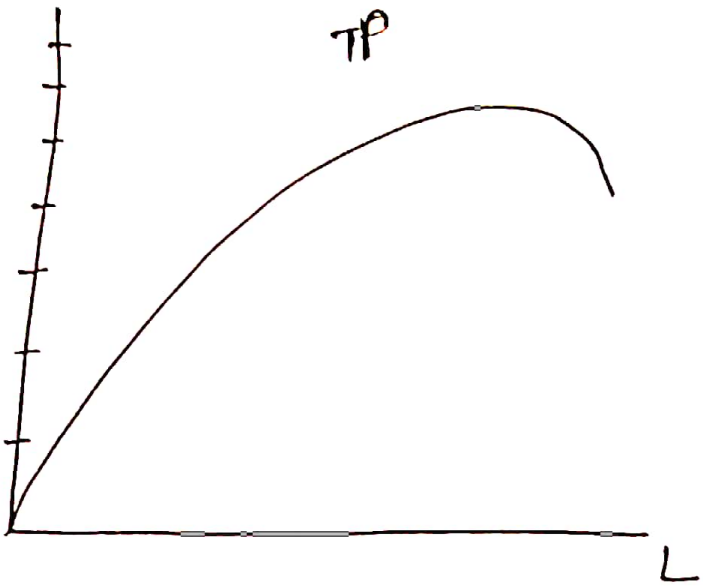
Various concept of production

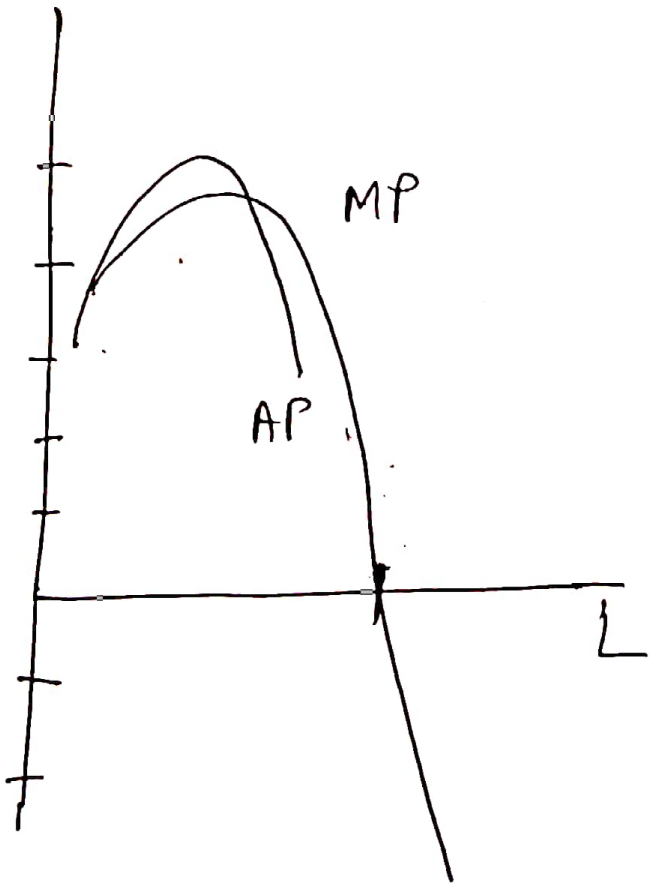
* Total product (TP)
* Average product (AP)
* Marginal product (MP)

Short run Production Function with Labour as Variable factor

AP = TP/L

Labour(L)	Capital	Total Output(TP)	AP	MP
0	10	0	-	
1	10	10	10	10
2	10	30	15	20
3	10	60	20	30
4	10	80	20	20
5	10	95	19	15
6	10	108	18	13
7	10	112	16	4
8	10	112	14	0
9	10	108	12	-4
10	10	100	10	-8





stages in Law of variable proportion

i) First

ii) Second

iii) Third

Definition of Market

Market structure

1. sellers and buyers
2. product
3. individual firms
4. ease of entry into or exit from

Perfect ~~Compition~~ Competition

Characteristics:

Monopoly:

1 seller, more than one buyers

Ex: WASA, Titas Gas Distribution

Characteristics

Monopolistic Competition

selling closely related but not identical commodities.

Ex: ~~Lux~~ Soap (Lux, Lifebuoy, Sandalina)

characteristics

Oligopoly

There are few seller of a product selling identical or differential products.

Ex: Mobile phone company.

Characteristics

Short-Run Equilibrium of the firm

* Total Profit : Total Revenue (TR) - Total Cost (TC)
* Total Revenue : Price x Quantity
*

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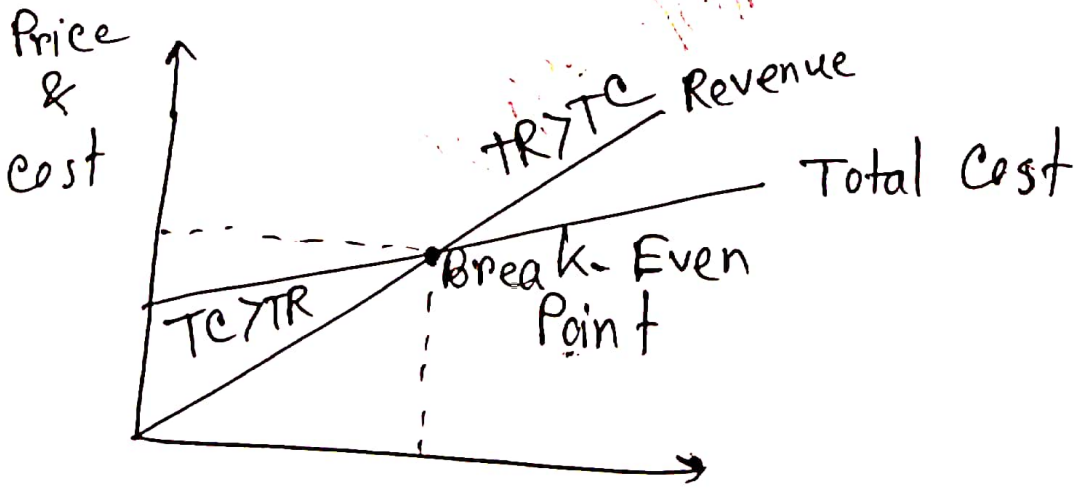
Short-Run Equilibrium of the firm:

Total Profit = Total Revenue - Total Cost

Total Revenue = Price × Quantity

Break Even point = (Total Revenue = Total Cost)



Marginal Approach:

Marginal Revenue.

Marginal Cost

Price = Marginal Revenue

Condition of Market Equilibrium

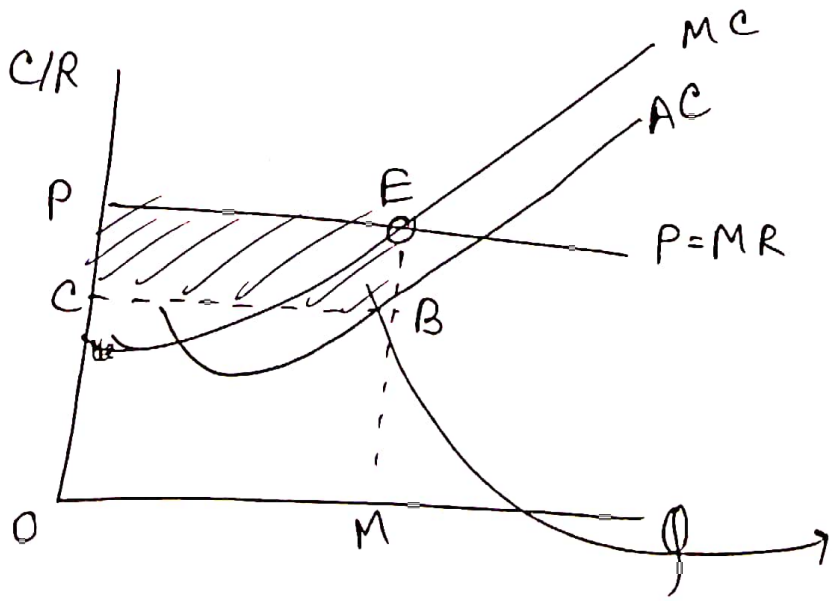
i) MR = MC

ii) Slope of MC is greater than slope of MR.

i) Super Normal Profits : Average Revenue > Short-Run Average

ii) Normal Profits

iii) Minimum loses



TR = OPEM

TC = OCBM

$\pi = TR - TC$

= OPEM - OCBM

= CPEB

Super Normal Profit

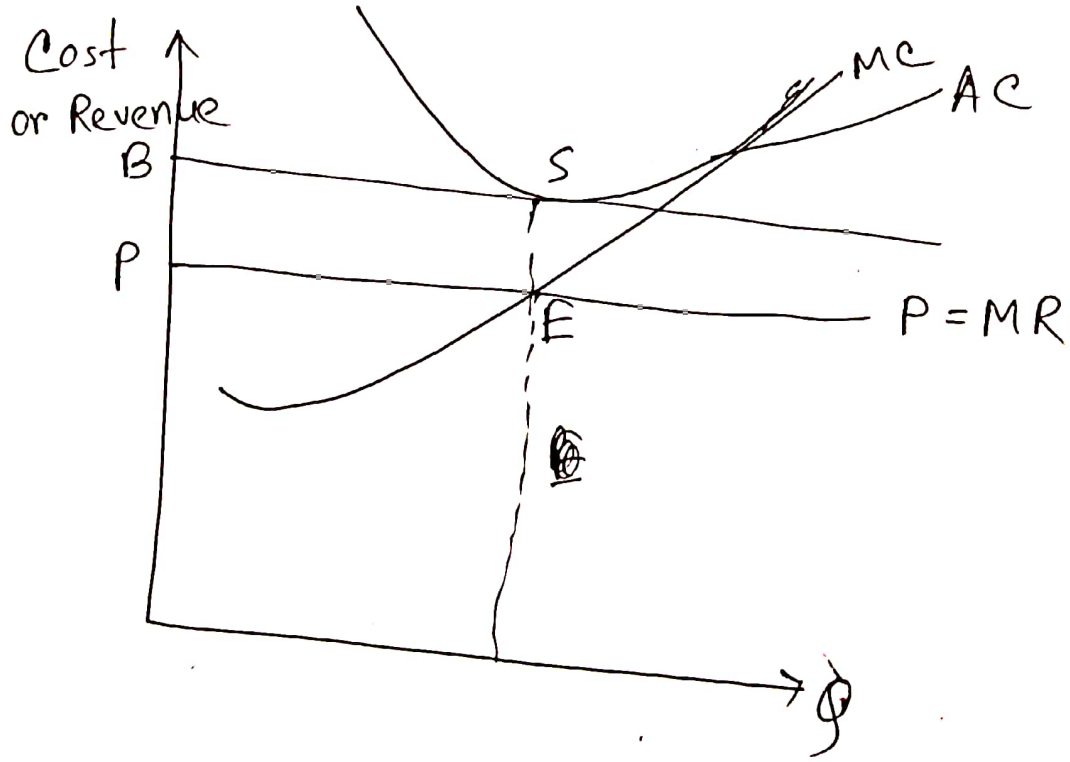
Normal Profits : AR = SAC

Graph on slide

TR = OPEM

TC = OPEM

Minimum Loss: AR < SAC



TR = OPEM

TC = OBSM

π = -PBSE