Chap 2 Theory of demand and Supply

Flow Concept → **Demand** → "Consumer point of View"

- Desire + ability to Pay + Willingness to Spend

(At a given price at a point of time)

1) Desire
2) Ability
3) Willingness
4) Price
5) Time.

Demand:
The term demand refers to Qty of good or service that buyers are willing and able to purchase at various price at a point of time.

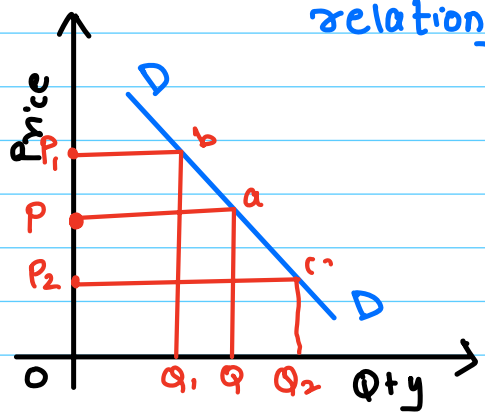
Demand
↓
Relative Concept

- Price
- Time.

[inverse relation]

↑ Price ↓ Qty demand

↓ Price ↑ Qty demand



- Downward slope
- Negative slope

Note: "When it is price of a Commodity then only Qty demanded should come"

Factors affecting demand [Determinants]

1.) Price of a Commodity ↑P ↓QD ↓P ↑QD.

★ [most important Factor]

2.) Income ⟶ Normal goods / Luxury goods

↑ income ↑ demand

↓ income ↓ demand.

⟶ Inferior goods

↑ income ↓ demand

↓ income ↑ demand.

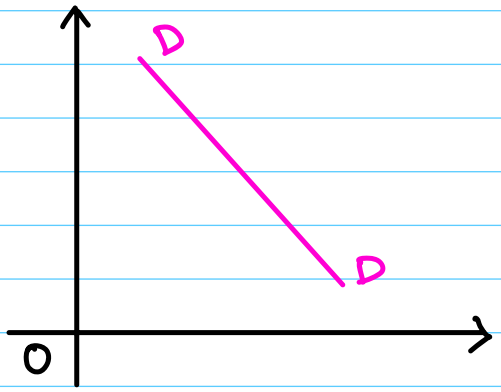
3.) Price of related goods

★

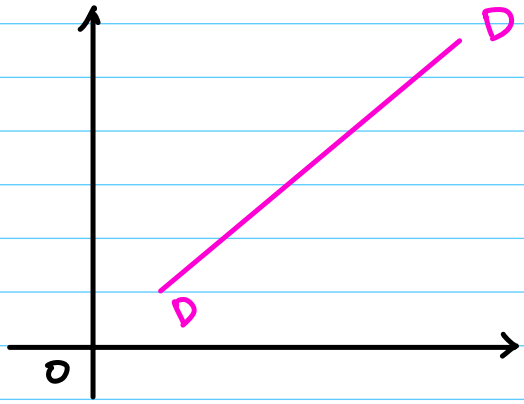
Complementary goods		Substitute goods.	
Car	Petrol	Pepsi	Coke

↑ Price	↓ demand	↑ Price	↑ demand
↓ Price	↑ demand	↓ Price	↓ demand

inverse relation



direct relation



downward slope / Negative slope

Upward slope / positive slope.

4.) Expectation about Future price

Gold

Present demand ↑ ↓

Future Price ↑ ↓

5.) Advertisement

6.) Distribution of income

7.) Population

8.) Credit Facility ★

9.) Taste, habit and Fashion

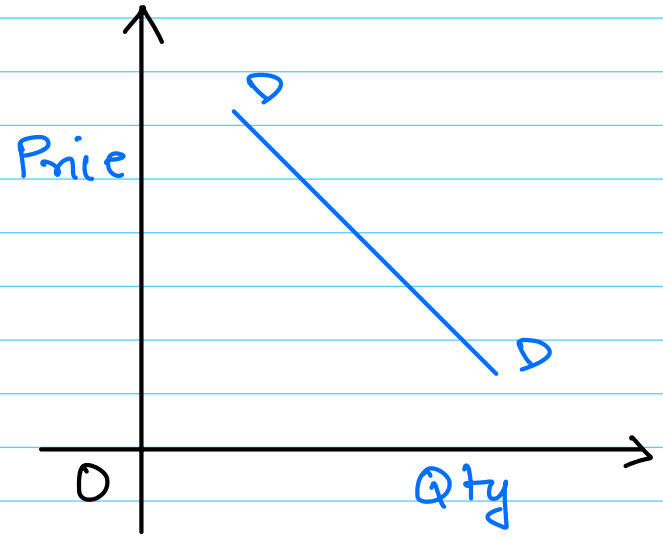
10.) Govt tax Policy. ★

Demand Schedule.

Individual demand Schedule.

When a Single buyer buying different Qty of a Commodity at a different price at a point of time.

Price	Qty Demand.
10	50
20	40
30	30
40	20
50	10

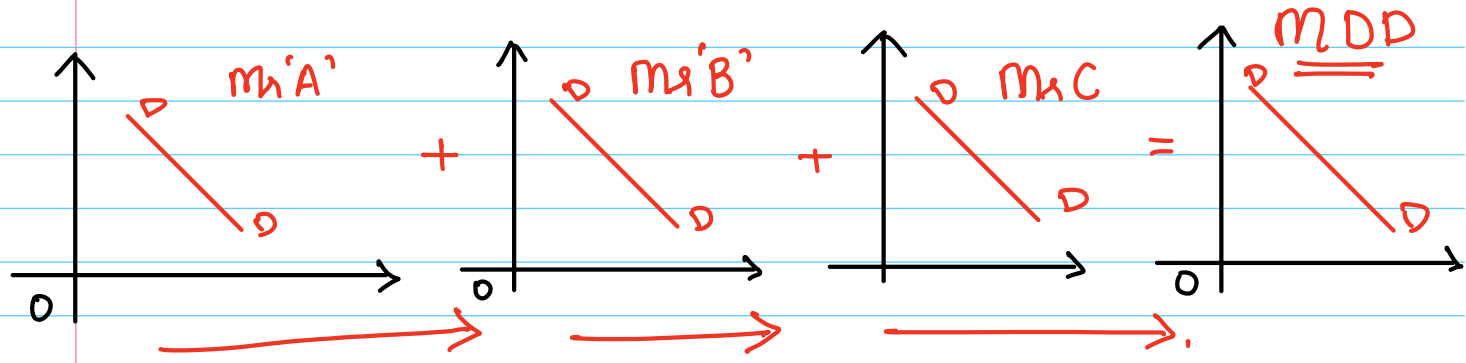


* ## Market demand Schedule.

Many buyers buying different Qty of a Commodity at different price at a point of time.

Price	Mr 'A'	Mr 'B'	Mr 'C'	Market demand [A+B+C]
1	50 +	60 +	70	= 180
2 ↑	40 + ↓	50 + ↓	60 ↓	= 150 ↓
3	30 ↓	40 ↓	50 ↓	= 120 ↓
4	20	30	40	= 90
5	10	20	30	= 60.

" Horizontal Summation of all individual demand curve gives market demand curve."



* Types of Demand.

1.) **Direct demand** : All Consumer goods

eg: Book, pen, car, Umbrella. etc.

2.) **Derived demand / indirect demand.**

Produces goods or Factors of Production.

eg: Land, Labour, Capital, Machines.

3.) Composite demand. [Multiple uses]

eg: Electricity, Water, Wood, Milk.

4.) Competitive demand : Substitute goods
eg: Coke / Pepsi

5.) Joint demand / Tied demand : Complementary goods
eg: Car and Petrol.

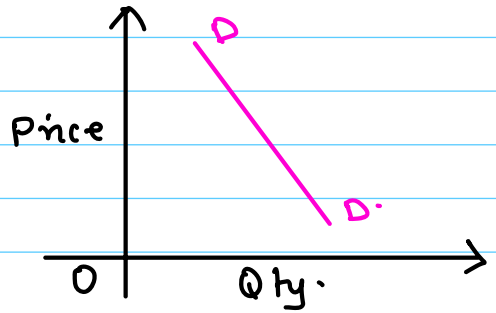
* Law of Demand.

- Alfred Marshall.
- Qualitative relation between Price & demand.

Statement.

" Other things being Constant [Ceterius Paribus]

More Qty will be demanded at Lower price and Less Qty will be demanded at higher price



* Why demand Curve Slope downwards.

[Rationale of the Law of demand]

1.) Law of DMU.

2.) Various uses of Commodity.

3.) Income effect : The increase in demand on account of an increase in real income is known as income effect

4.) Substitution effect

* [Income effect + Substitution effect = Price effect]

* Law of Substitution effect and income effect concept is given by "Hicks & Allen"

5.) Number of Consumers :

When price falls more Consumers start buying ↑↓

* Exceptions to Law of Demand.

"Will go against Law of demand"

↑ price ↑ demand

↓ price ↓ demand

"Upward sloping exceptional demand curve."

1) Giffen goods : Inferior goods

[Scottish economist] ↑ Price ↑ demand.

- [Goods which exhibit direct price - demand relationship are called Giffen goods.] ***

- All giffen goods are inferior goods but all inferior goods are not giffen goods.

eg: Bread, coarse grains like bajra, Low quality rice and Wheat etc.

2.) Conspicious goods / Prestige goods / Snob goods / Veblen goods

- Veblen effect takes place as some consumers measures the utility of a commodity by its price. i.e if commodity is expensive they think that it has got more utility.

- Snob behaviour

When group of consumers decides to stop consumption of a commodity since it has become very common in the market.

3.) Future expectation about price.

4.) Ignorance effect

5.) Consumer Price Illusion.

6.) Demonstration effect / Bandwagon effect
Conspicuous necessity [Copying others]
given by 'James Duesenberry'

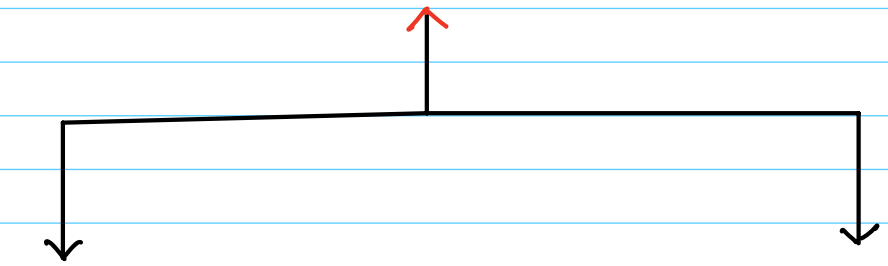
7.) Impulsive purchase [irrational behaviour]

8.) Demand for Necessaries

9.) Speculative goods.

Tata.M 1000/-
600 x 100 qty.
628 x 100 qty.
710 x 100 qty.

* Variation in demand.

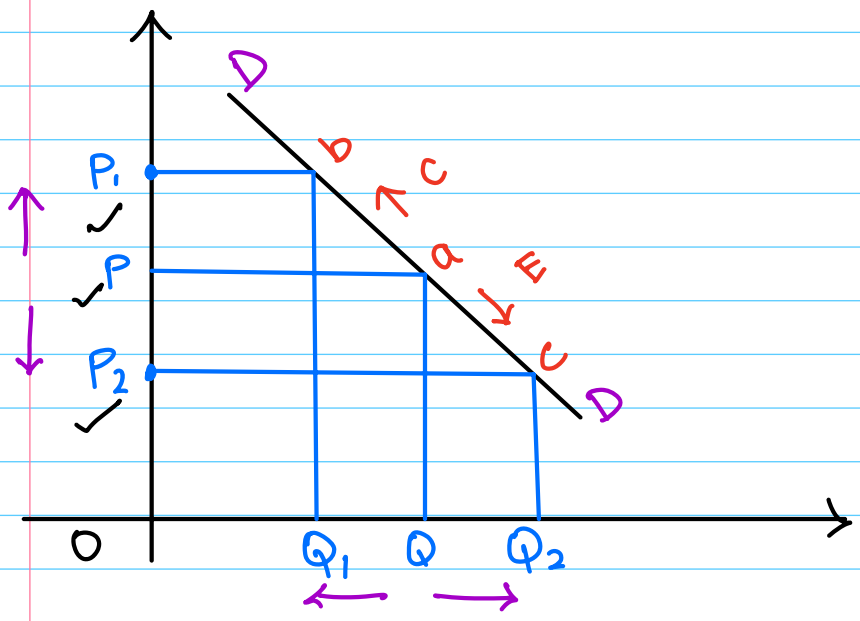


Expansion in demand
[Rise in demand due to fall in price]

Contraction in demand.
[Fall in demand due to rise in price]

[When demand changes to Price only Other factors will remain constant]

* Also known as change into Qty demand / Price — Movement along the same demand curve. / Price



Upward slope
↓
Contraction

Downward slope
↓
Expansion.

* Change in Demand.

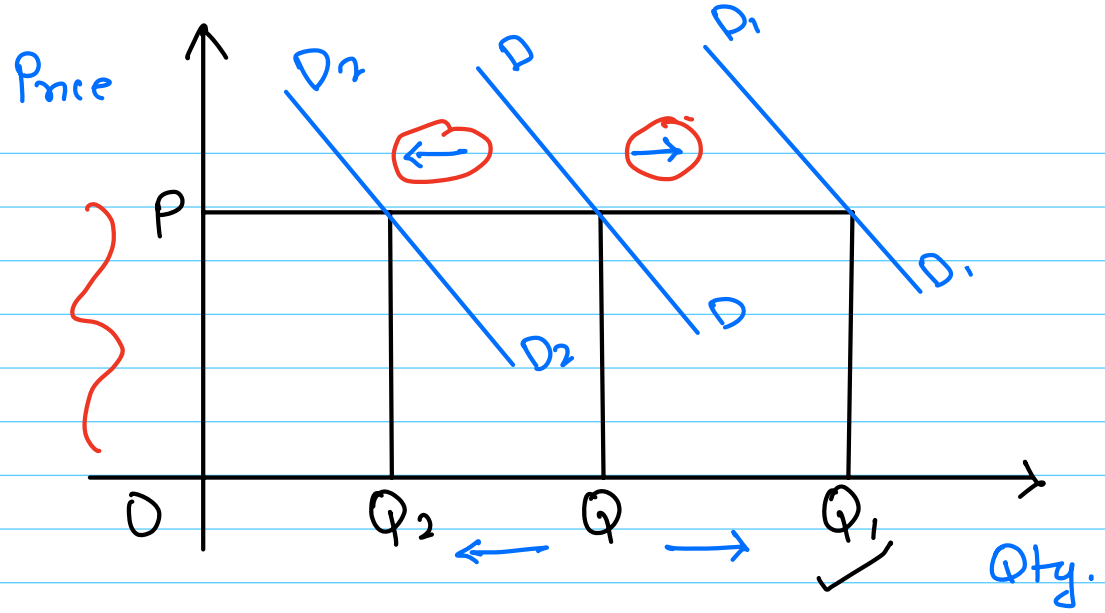
↓

Increase in demand

Decrease in demand.

[When demand changes due to other Factors
Price remains Constant]

Shift in demand Curve.



$Q \rightarrow Q_1$ →
- Rightward shift
- Outward shift
- higher demand curve.

$Q \rightarrow Q_2$ →
- Leftward shift
- Inward shift
- Lower demand curve.

Rightward Shift	Leftward Shift
• Rise in income in case of normal goods	Fall in income [normal goods]
• Rise in price of substitute goods	Fall in price of Substitute goods
• Fall in the price of a Complement	Rise in the price of Complement.

Increase in number of buyers	Decrease in number of buyers.
Govt policy encouraging	Govt policy discouraging

* # Elasticity of Demand.

Elasticity of demand. [Alfred Marshall]

- Quantitative relationship between price and demand.
- Responsiveness to change in demand due to price and other factors.

Elastic demand	Inelastic demand.

3kg → 1.5kg.

3000 6000/-

5000/-

7800/-

Types of Elasticity of Demand.

1.) Price elasticity of demand.

$$E_p = \frac{\%\text{ change in Qty demand.}}{\%\text{ change in Price}}$$

$$E_p = \frac{\Delta Q}{Q} \times \frac{P}{\Delta P}.$$

2.) Income elasticity of demand.

$$E_y = \frac{\%\text{ change in Qty demand}}{\%\text{ change in income.}}$$

$$E_y = \frac{\Delta Q}{Q} \times \frac{Y}{\Delta Y}.$$

3.) Cross elasticity of demand

Pepsi ↓ ⇄ Petrol ↓

$$E_c = \frac{\%\text{ change in Qty DD of Product 'A'}}{\%\text{ change in price of Product 'B'}}$$

↓ Coke ↓ Car ↑

$$Ec = \frac{\Delta Q_a}{Q_a} \times \frac{P_b}{\Delta P_b}$$

4) Advertisement elasticity of demand.

$$Ea = \frac{\%\text{ change in Qty DD.}}{\%\text{ change in Adv expenditure.}}$$

* Complementary goods have negative cross elasticity.

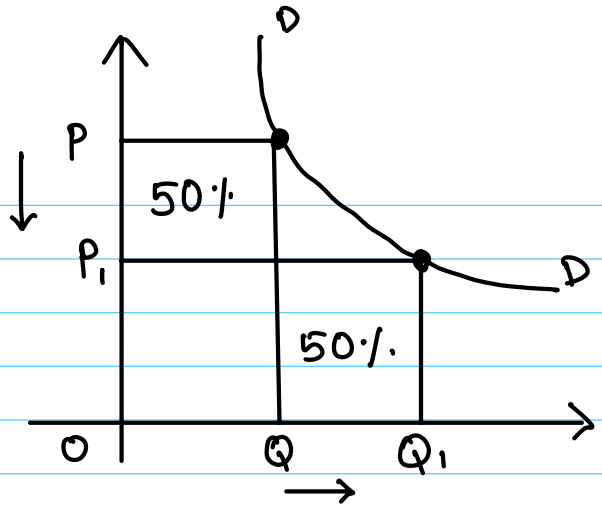
* Substitute goods have positive cross elasticity

* Unrelated goods have zero cross elasticity.

* Types of Price elasticity of Demand.

1) Unitary elastic demand. $e = 1$

% change in Qty demand is equal to % change in Price. [uniform elastic]

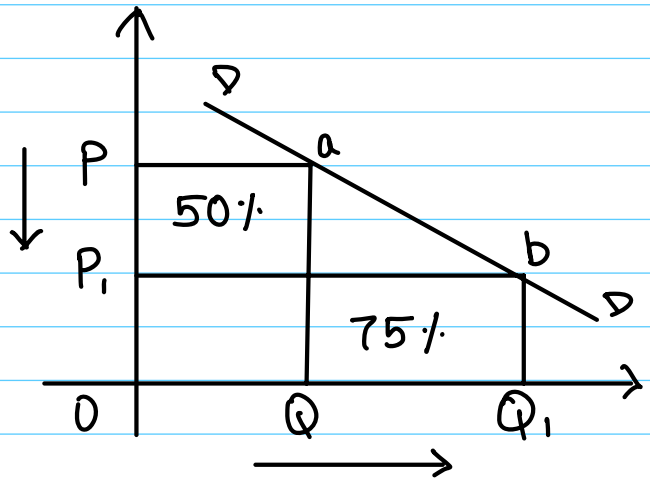


(Normal goods)

"Rectangular hyperbola Curve."

2.) Relatively elastic demand, High elastic demand, More elastic demand e > 1

When % change in Qty demand is greater than % change in Price.



[Luxury goods, Superior goods

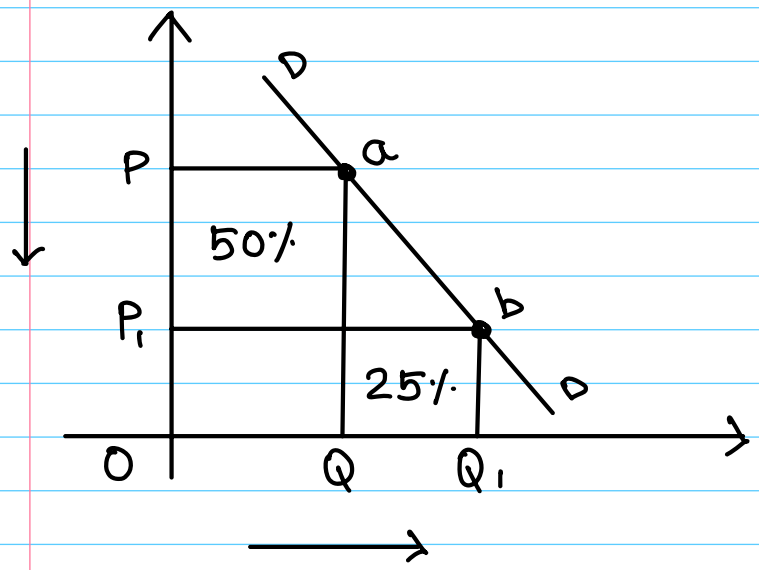
Branded goods]

"Downward Sloping Flatter Curve"

3.) Relatively inelastic demand, Low elastic demand

Less elastic demand $e < 1$

When % change in Qty demand is Less than % change in Price

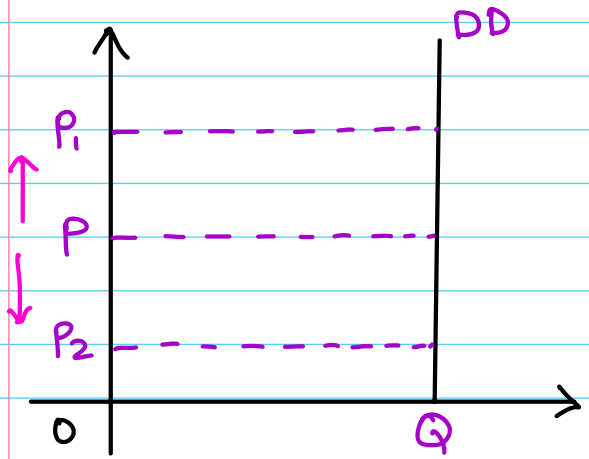


(Necessaries or Perishable goods)

[downward sloping Steeper slope]

4.) Perfectly inelastic demand. $e = 0$

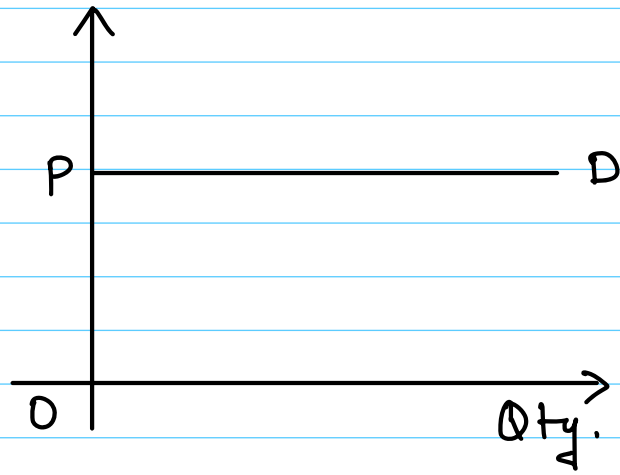
When Small change in a price of a Commodity brings about No change in Qty demand.



(Life savings drugs Salt, match box)

5.) Perfectly elastic demand $e = \infty$

When slight change in a price of a Commodity brings about infinite change in Qty demand. endless change.



[Unrealistic Concept.]

Types of Income elasticity of demand.

1.) Zero income elasticity $ey = 0$

eg: Salt, newspaper, Life saving drugs, match box.

2.) Negative income elasticity $ey < 0$.

eg: Inferior goods

3.) Unitary income elasticity $e_y = 1$

eg: Normal goods

4.) Income elasticity greater than One $e_y > 1$

eg: Superior goods, Luxury goods.

5.) Income elasticity Less than one $e_y < 1$

eg: Necessaries or Perishable goods.

* Methods for measuring elasticity of demand.

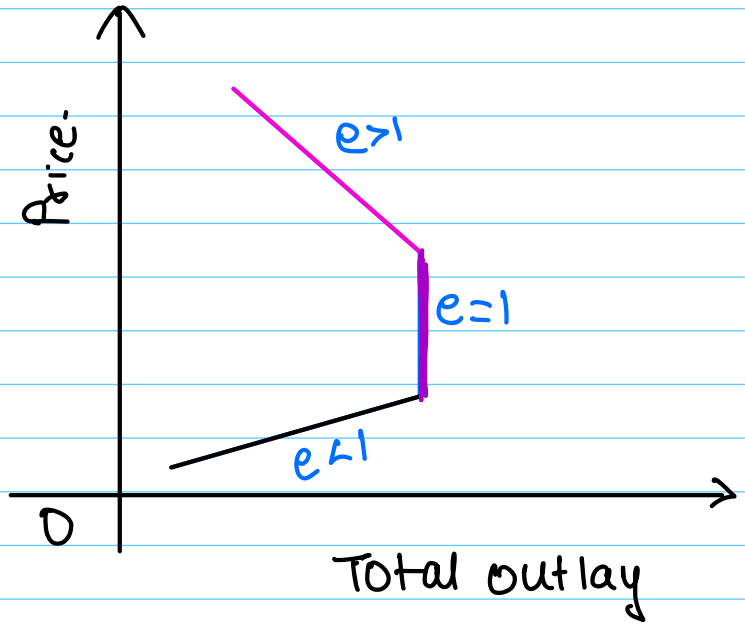
1.) Ratio or percentage method.
(Same as Price elasticity of demand).

2.) Total Outlay method (Alfred. M)

- Expenditure method. ***
- Revenue method. ***

TO = Price x Qty.
10 x 20 = 200/-

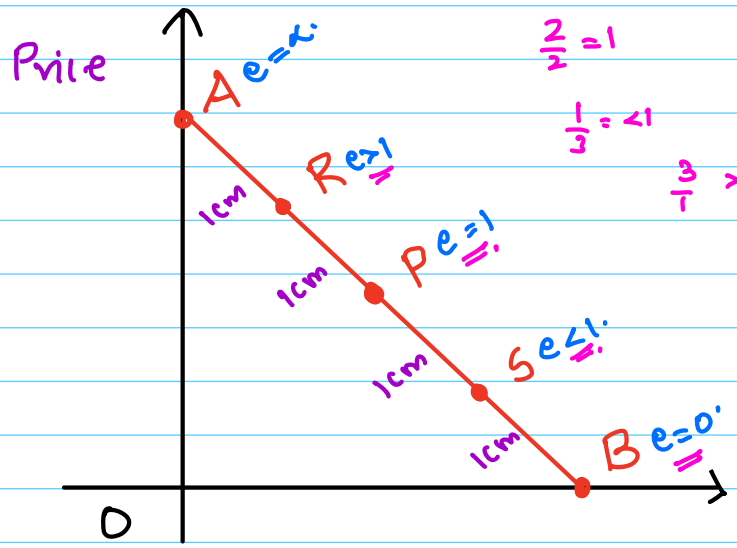
Case	Price	Qty	TO	Elasticity.
1	10 ↓ 8	12 15	120 120	e = 1 unitary elastic
2	10 ↓ 8	12 20	120 ↑ 160	e > 1 Elastic demand.
3	10 ↓ 8	12 14	120 ↓ 112	e < 1 inelastic demand.



3.) Point or Geometric method.

$$Ed = \frac{\text{Lower Segment}}{\text{Upper Segment}}$$

When change in the price is very small, tiny, negligible



$\frac{2}{2} = 1$

$\frac{1}{3} < 1$

$\frac{3}{1} > 1$

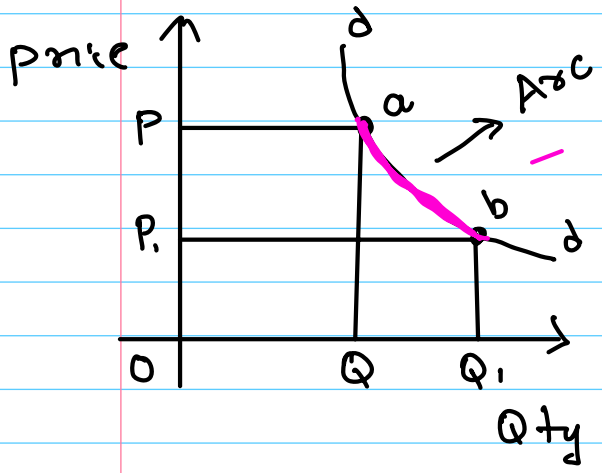
"Downward sloping Straight line negative linear demand Curve touching both the axis"

$$Ed = -\frac{dq}{dp} \times \frac{P}{q}$$

4.) Arc elasticity method.

When change in the price is Large, greater, substantial.

-0.13 0.13 ✓



"In arc method ignore negative Sign"

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

$Q_1 P_1 \rightarrow$ Old Qty and price.

$Q_2 P_2 \rightarrow$ New Qty and price.

* Factor affecting elasticity of demand.

1.) Availability of Substitutes

Substitutes ⟶ elastic

No Substitutes ⟶ inelastic

2.) Position of Commodity in Consumers budget

- Occupys small part of Budget → inelastic
  eg: matchbox.
- Occupys large part of our Budget → elastic
  eg: transportation.

3.) Nature of Commodity

Necessities → inelastic

Luxury goods → elastic.

4.) Number of uses

Multiple uses → elastic

Single use → inelastic.

5.) Time period

Short period → inelastic

Long period → elastic

6.) Consumer habits

Addicted / habits → inelastic

No habits → elastic

7.> Joint demand.

Complementary goods ⟶ inelastic
[Low elasticity]

8.> Price Range.

Very high price product and a very Low price product both are inelastic. but a medium price product is elastic.

Consumer Behaviour.

Wants

"All desire, wants, motive, need of human beings are called as Wants"

- Wants are unlimited
- Wants are recurring
- Wants are Competitive
- Wants are Complementary.
- Wants are changing with time, place, person.

Classification of Wants.

1.) Necessaries → Basic human want.

2.) Comforts → AC, two wheeler

3.) Luxuries → Lavish birthday, Rolex watch

* Utility. → Abstract term

1.) Want satisfying power of a Commodity.

2.) Capacity of a Commodity to satisfy a human want.

[Wish to have something is desire, You put efforts to acquire it is called wants]

Features of Utility.

1.) Subjective Concept.

Differs from person to person.

2.) Differs from usefulness.

Commodity may give utility but may not be useful. eg: Alcohol.

3.) Relative Concept:

Related to place and time.

4.) Depends on intensity of Wants.

5.) Differs from Satisfaction.

6.) May not always give you Pleasure.

* Types of Utility.

1.) Place utility = Transportation

2.) Time utility = Storage, Warehouse

3.) Form utility = Manufacturing process

4.) Service utility = Professional services

5) Knowledge utility = higher knowledge higher utility.

6) Possession utility = Transfer of Ownership.

Law of Diminishing Marginal Utility.

- Mr Grossen's 1st Law — 2nd Law Equi-marginal utility.
- Alfred Marshall POE 1890.
- Cardinal approach ⟶ Utils.

Statement

"Other things being Constant Additional benefit which a person derives from increase in a stock of a thing diminishes with every increase in a

Stock that he already has.

* Total utility : Utility derived by a Consumer after Consuming all units of a Commodity.

$$TU = \Sigma MU.$$

* Marginal utility : Utility derived by a Consumer after Consuming one additional unit of a Commodity

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

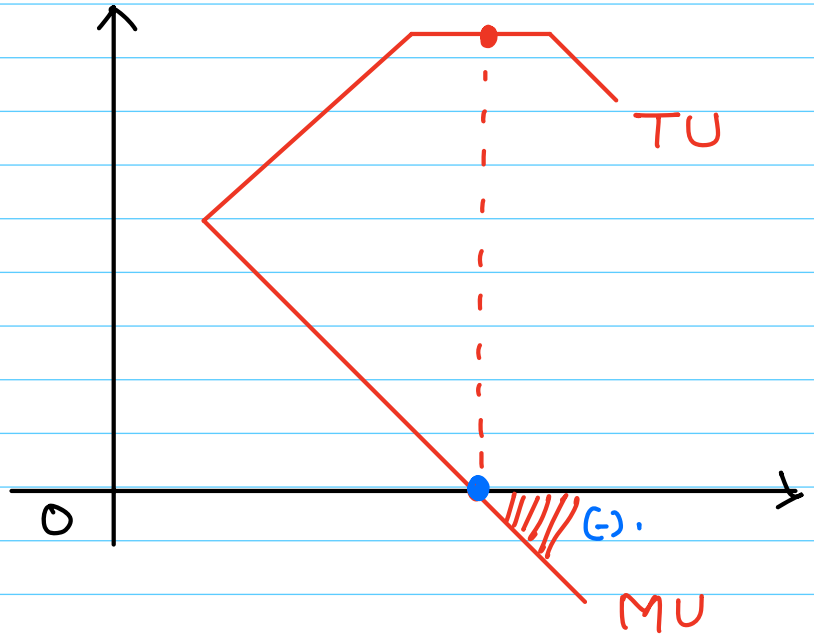
OR

$$MU = \frac{\Delta TU}{\Delta Q.} \rightarrow \frac{18-10}{2-1} = 8 \text{ MU}$$

Mango %

No of units	TU	MU	
1	10	10	→ Highest satisfaction
2	18	8 (+)	
3	22	4 (+)	
4	22	0 (+)	→ Full satisfaction
5	20	−2 (+)	→ Disutility.

* Shape of TU = Inverted 'U'
* MU curve is also known as "Demand Curve"



- Assumptions.

1.) Homogenity
2.) Single use.
3.) Rationality.
4.) Continuity
5.) Reasonability.

Consumer Surplus.

(MU) (Market price)

CS = Price ready to Pay − Price actually paid.

Basedon Law of DMU

Cardinal approach

Consumer Surplus.

Extra utility

Monopoly market.

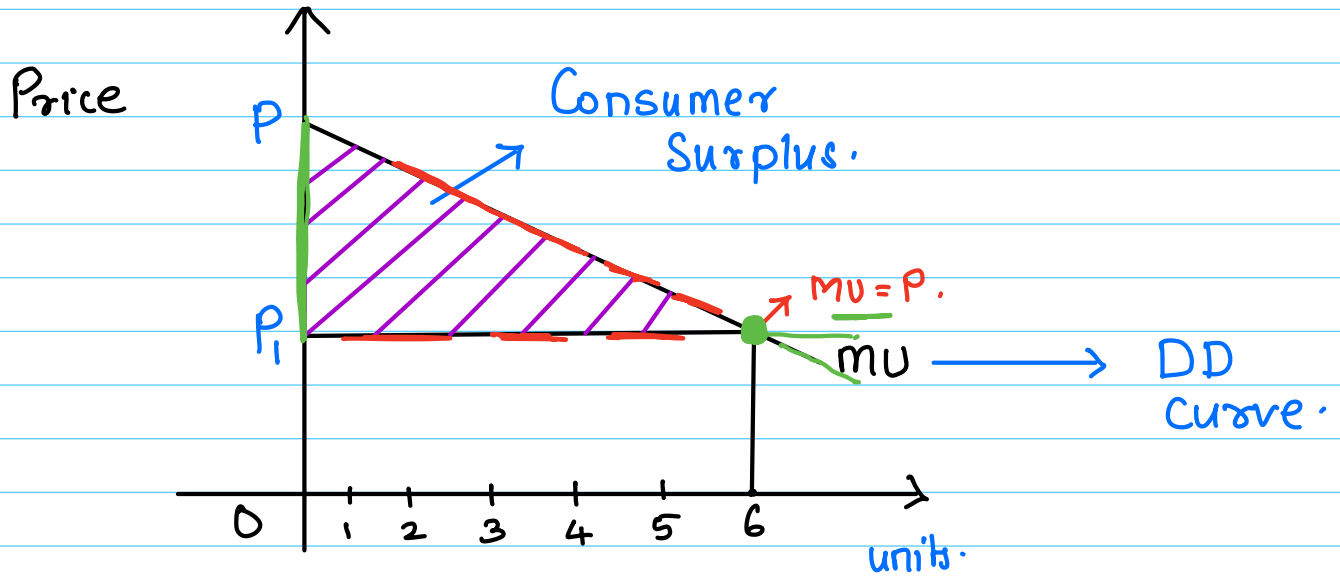
Alfred Marshall.

Highest in Case of Necessaries

useful for tax policy.

No of units	[MU] Ready to Pay	[Market price] Price actaally paid.	Consumer Surplus.	
1	30	20	10	
2	28	20	8	MU > P.
3	26	20	6	
4	24	20	4	
5	22	20	2	
6	20	20	0	MU = P
7	18	20	−2.	MU < P

MU = money



Indifference Curve analysis

- Hicks and Allen
- Ordinal approach [Scale of Preferance]
- Normal goods → imperfect Substitutes

Statement:

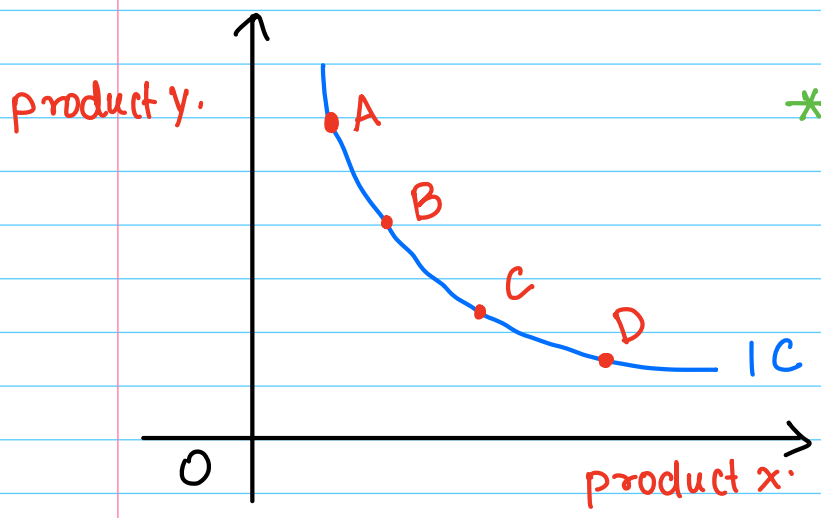
Various Combinations of two goods that will give same level of Satisfaction.

ice-cream Chocolate.

Combinations	Product x	Product y	MRS (x,y)
A	1	12	–
B	2	6	6
C	3	4	2
D	4	3	1

Assumptions :

- Only two goods
- MRS is diminishing.



Points on the Curve
"Locus"

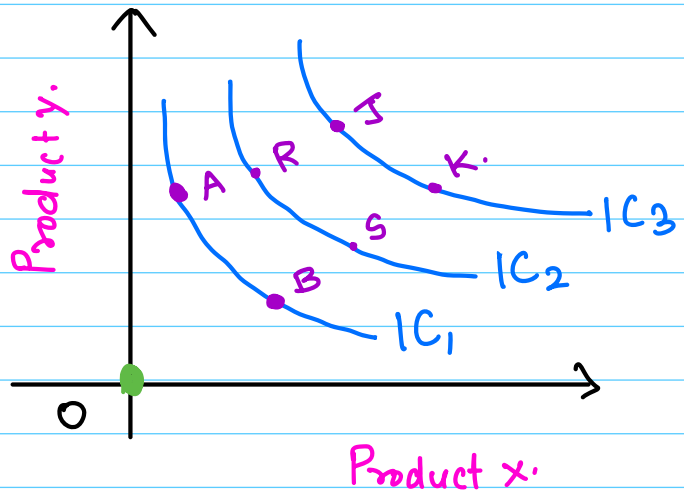
* Slope of indifference Curve.

$$\frac{MUx}{MUy}$$

Downward sloping,
Convex
↓
Normal goods.

Indifference Map:

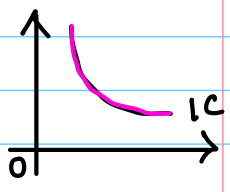
A set or a Family of indifference curve gives indifference Map.



- The Curve Which is far from the Origin higher Satisfaction.
- The Curve Which is near to the Origin Lower Satisfaction.

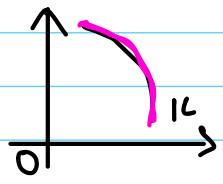
* *** Indifference Map is based on Consumer's taste and Preferance

MRS ↓



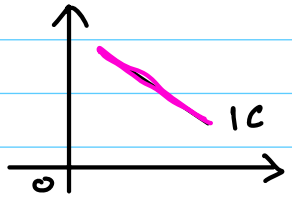
Convex.

MRS ↑



Concave.

MRS [Constant]

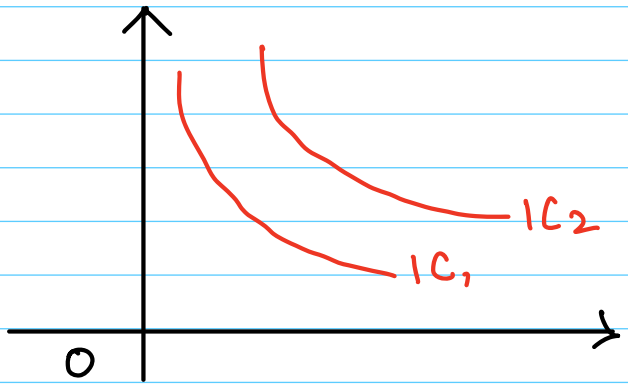


Straight Line.

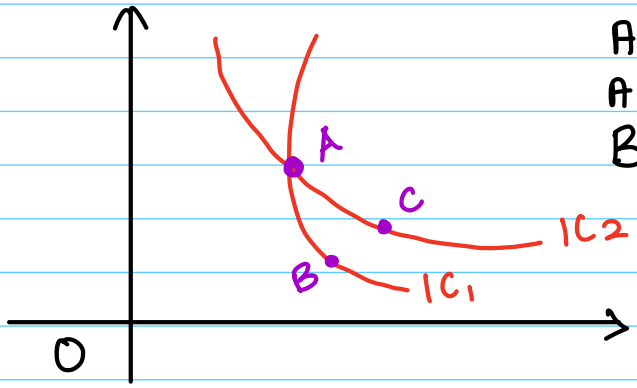
Properties of indifference Curve.

1.> IC is downward sloping and Convex.

2.> Higher IC gives higher Satisfaction.

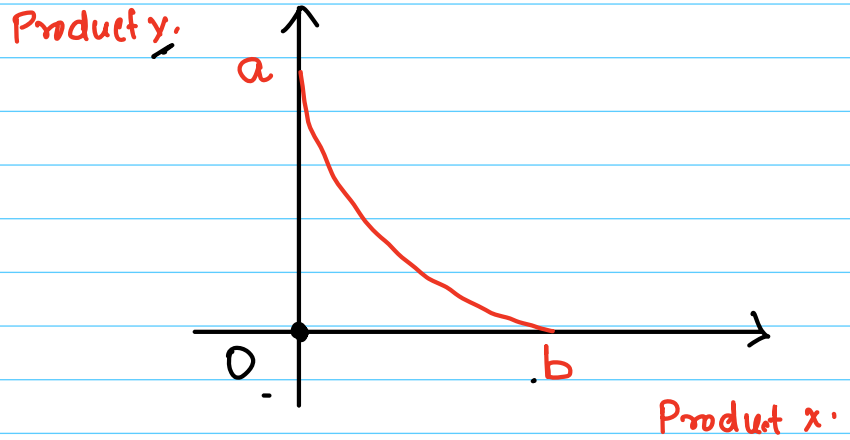


3.> Two IC should never intersect each other



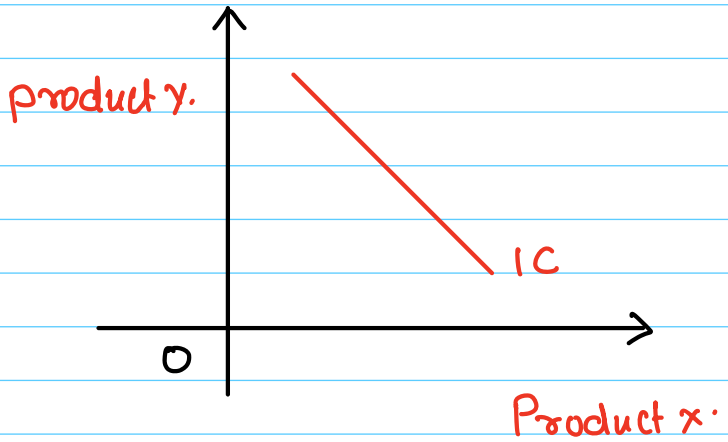
A=B ✓
A=C ✓
B ≠ C.

4.) IC should not touch the axis

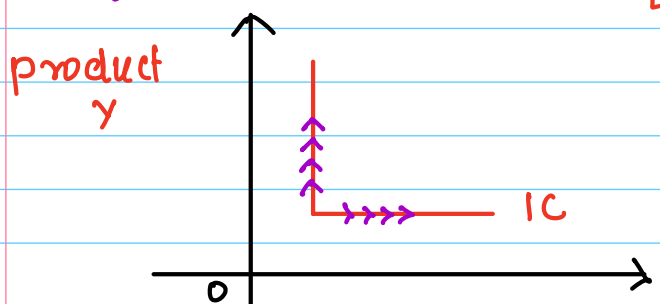


Exception to IC

1.) Perfect Substitutes [MRS is Constant]



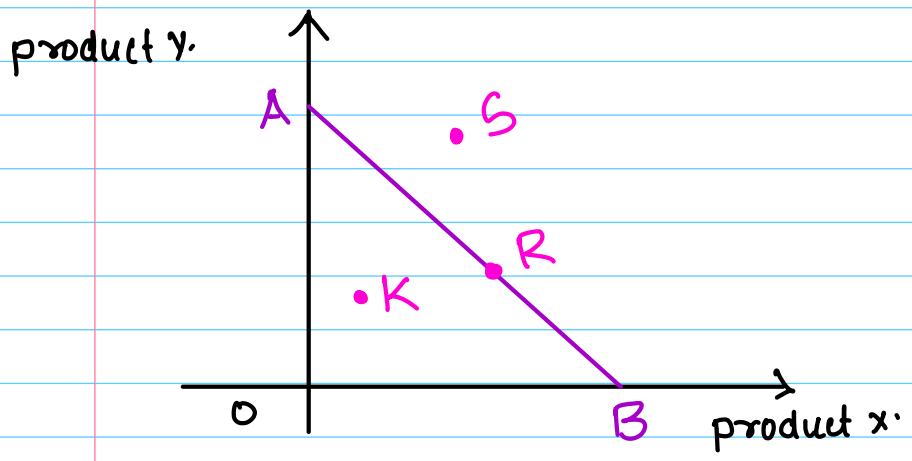
2.) Perfect Complements [MRS is Zero]



Product x.

Budget Line / Price Line.

Various Combinations of two goods which a Consumer can buy with his Money income



Slope of Budget Line.

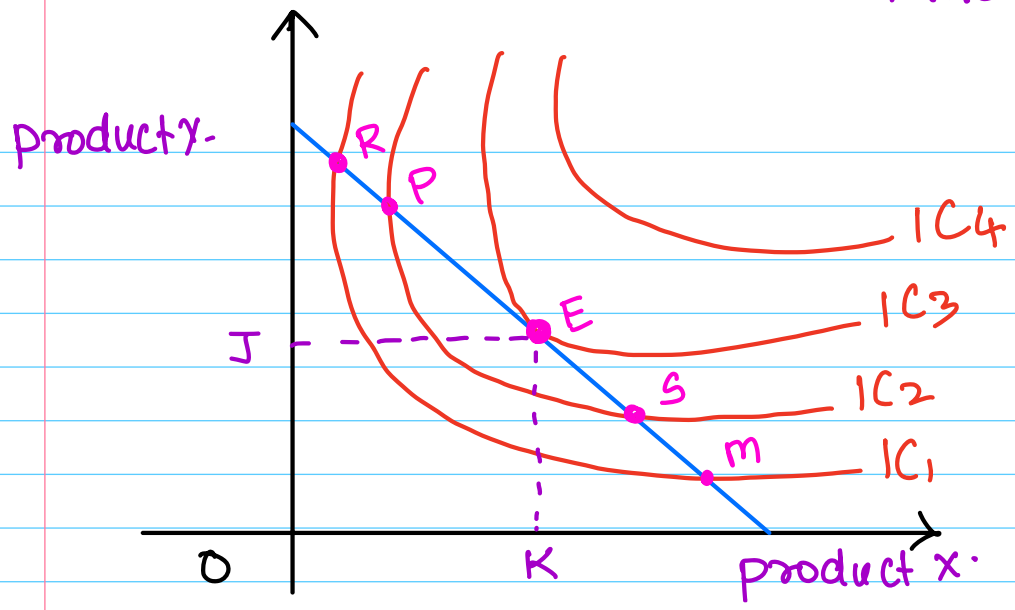
$$\frac{P_x}{P_y}$$

Downward sloping Constant budget line touching both the axis

Consumer Equilibrium.

- It is a point where satisfaction is equal to budget
- The Consumer is said to be in equilibrium when he maximizes his satisfaction.
- IC_3 is tanget to budget line at point 'e'

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



Point E is the point of Equilibrium as it Lies on Budget Line and also on highest possible indifference Curve

Flow Concept. → **Supply.** : "Producer point of view."

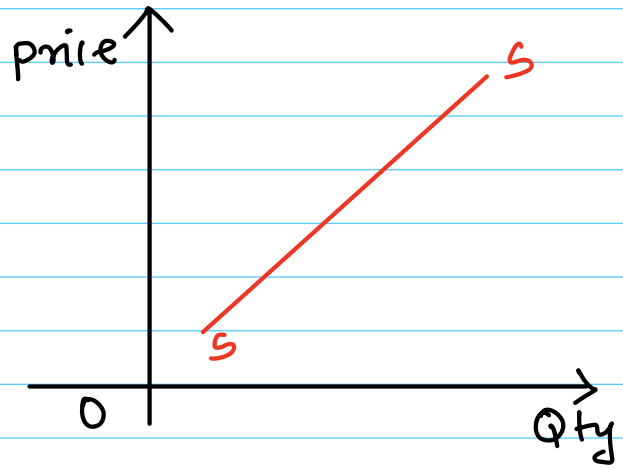
- Relative Concept. < Price / time.

Supply.
↑
Stock
↑
Output.
↑
Production

Price ↑ Qty Supply ↑

Price ↓ Qty Supply ↓

"Direct relation between Price and Qty Supply."



upward slope

positive slope

Definition

- Supply is defined as a Qty of a Commodity which is offered for sale in the market at a given price at a point of time.
- Producer plan's to sell at a given price at a point of time.
- Producer is able and willing to offer. at given price at a point of time.

* Factors / Determinants of Supply.

1.) Price of a Commodity

2.) Price of related goods

Shirt	T-shirt
500 ↓	400 ↑
550	600

3.) Cost of Production.

4.) Technology

5.) Govt policy

Tax ↑ S ↓ Subsidy ↑ S ↑

Tax ↓ S ↑ Subsidy ↓ S ↓.

6.) Time

Short period ⟶ Less Supply

Long period ⟶ More Supply.

7.) Number of Firms

Monopoly ⟶ Less Supply

Competition ⟶ high Supply.

8.) Natural Factors

Law of Supply

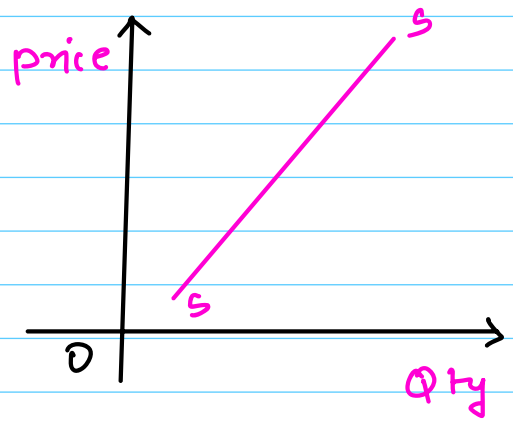
- Alfred marshall POE 1890
- Direct relationship between Price & Qty Supply

Statement:

"Other things being Constant"

More Qty will be Supplied at higher price and Less Qty will be Supplied at Lower price

Price	Qty ss
10	60
20	70
30	80
40	90
50	100

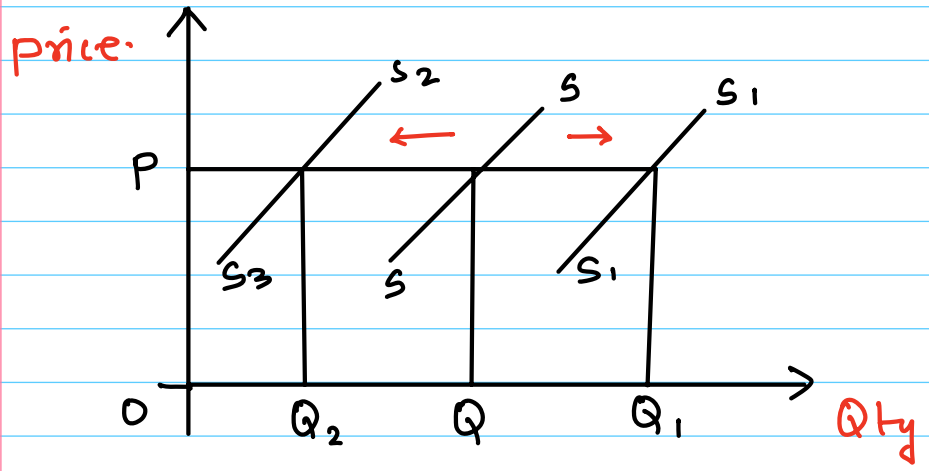


Change in Supply

- Increase in Supply
- Decrease in Supply.

[When Supply changes due to other Factors Price will be Constant]

{Shift in Supply Curve.}



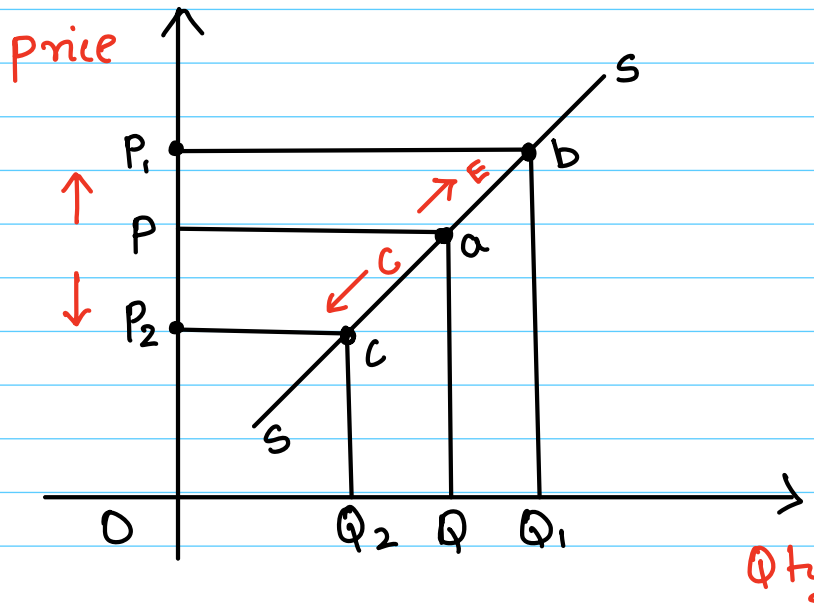
- Rightward Shift, Outward Shift, higher Supply Curve
- Leftward Shift, inward Shift, Lower Supply Curve

Variation in Supply

- **Expansion in Supply** → More Qty is Supplied at high price
- **Contraction in Supply.** → Less Qty is Supplied at lower price

> When Supply changes due to Price only
> other factor are kept Constant

* Change in Qty Supplied / Movement along the Same Supply curve.



upward slope
↓
expansion

downward slope
↓
Contraction.

Elasticity of Supply

Responsiveness to change in Supply due to Price

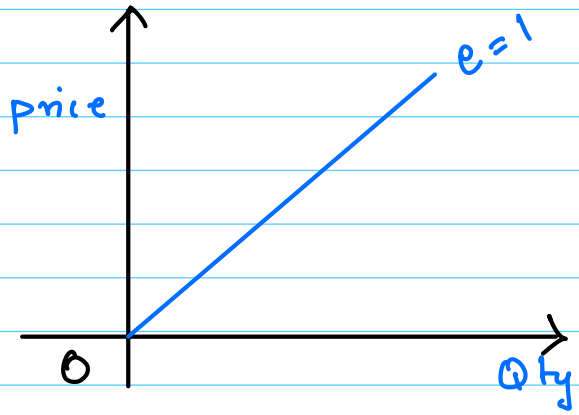
Elastic Supply	Inelastic Supply

$$\text{Price elasticity of Supply} = \frac{\%\text{ change in Qty Supply}}{\%\text{ change in Price.}}$$

Types of Price elasticity of Supply

1.) **Unitary elastic Supply** $e = 1$

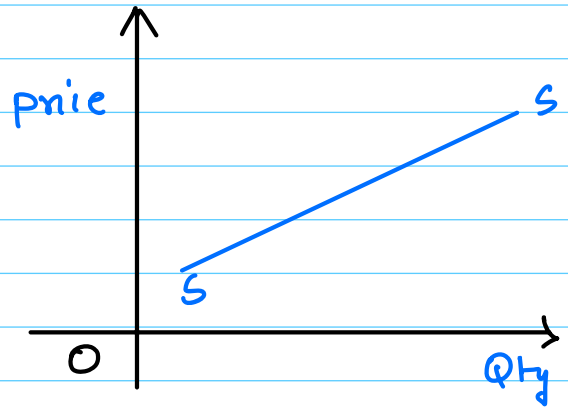
% change in Qty Supply is equal to % change in Price.



2.) Relatively elastic supply / High elastic Supply

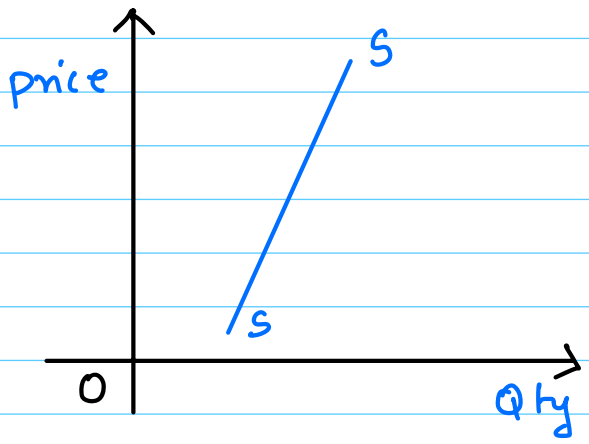
More elastic Supply $e > 1$

% change in Qty Supply is greater than than % change in Price



3.) Relatively inelastic Supply / Low elastic Supply

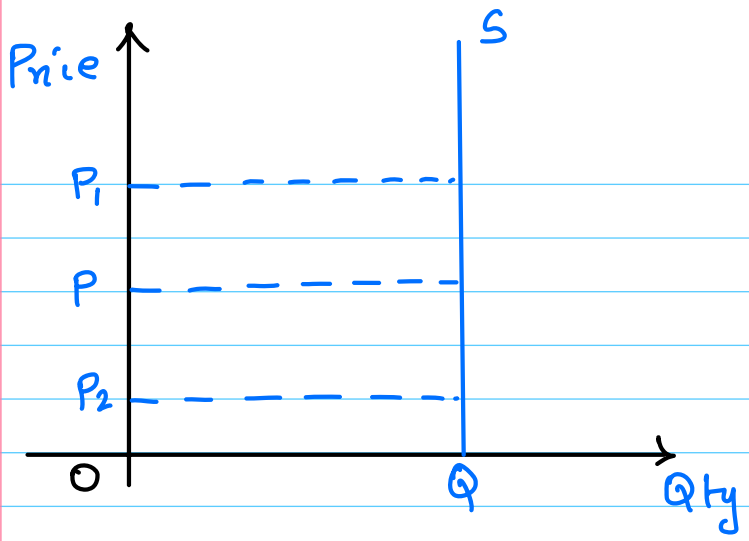
Less elastic Supply $e < 1$



% change in Qty Supply is Less than % change in Price.

4.) Perfectly inelastic Supply $e = 0$

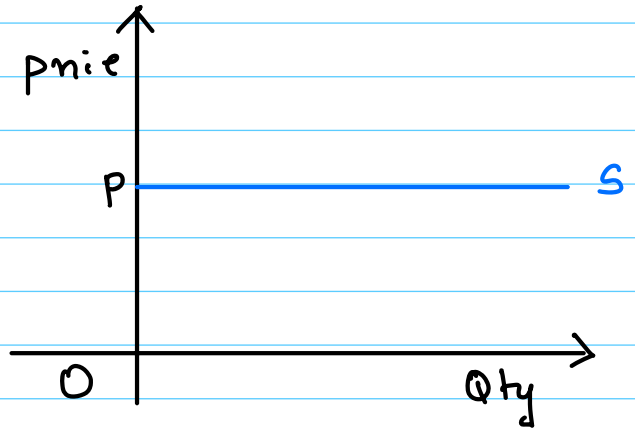
When Slight change in the Price of the Commodity brings no change in Qty Supply.



- Land
- Perishable goods
- Rare articles.

5.) Perfectly elastic Supply $e = \infty$.

When Slight change in the price of the Commodity brings about infinite change in Qty Supply

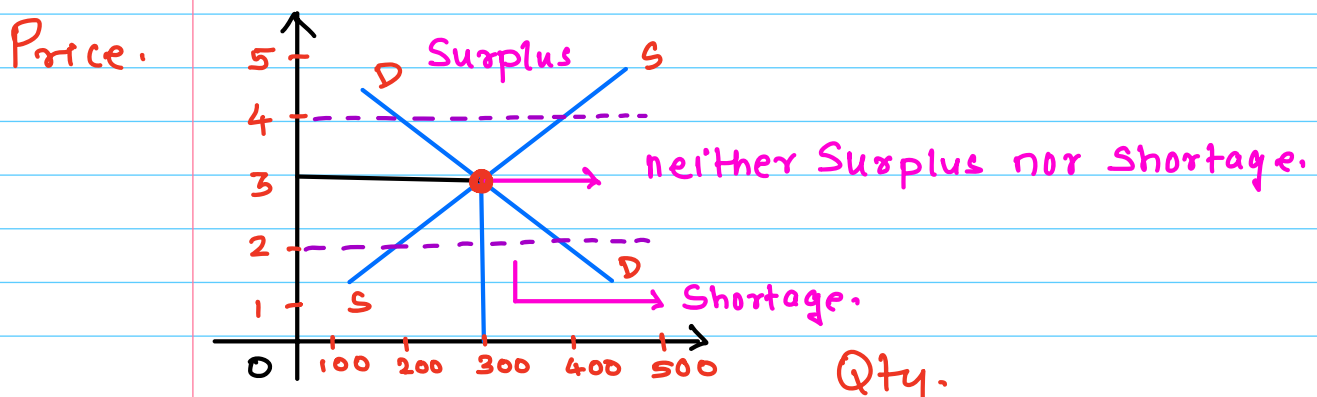


Unrealistic Concept.

Equilibrium Price.

- It is that price where Qty demand = Qty Supply.
- Equilibrium price is also known as Market Clearing Price.
- In equilibrium price there is no shortage no Surplus.

Price	Qty DD	Qty SS	Effect on Price.
5	100	500	↓ Price (falls)
4	200	400	
3	300	300	Equal
2	400	200	↑ Price (Rises)
1	500	100	



1.) When DD ↑ Supply Constant → Qty DD ↑ Price ↑

2.) When DD ↓ Supply Constant → Qty DD ↓ Price ↓

3.) When SS ↑ demand Constant → Qty SS ↑ Price ↓

4.) When SS ↓ demand Constant → Qty SS ↓ Price ↑

5.) When DD ↑ SS ↑ but proportion is not given

↓

Qty DD and SS both ↑ Price may either rise fall or remain Constant.