

THEORY OF DEMAND

UNIT-THEORY OF DEMAND

* Four factors of production :-

- (i) Land \rightarrow Rent
- (ii) Labour \rightarrow wages
- (iii) Capital \rightarrow Interest
- (iv) Enterpreneur \rightarrow profits

* Determinants of demand :-

- (i) Price of the commodity
- (ii) Price of Related goods

Related goods



Substitute Complementary

- (iii) Income of consumer
- (iv) Taste and preference
- (v) Expectation of consumer

By producer point of view:-

- (i) No. of consumers.
- (ii) Distribution of consumer

(iii) Other factors

$$Dx = f(P_x, P_s, P_c, Y, T, E, N, D, U)$$

* Determinants of demand for different goods :-

(I) Non-durable Consumer goods :-

(a) Purchasing power :- Discretionary income is income remaining after deduction taxes, social security charges and basic living cost.

(b) Price :- Cross price elasticity is important in case of Non-durables which can be stored for some time without any risk of change.

(c) demography :- This involves characteristics of populations, human as well as non-human, which use given product.

$$d = f(Y, D, P).$$

d → forecasted demand

Y → discretionary income

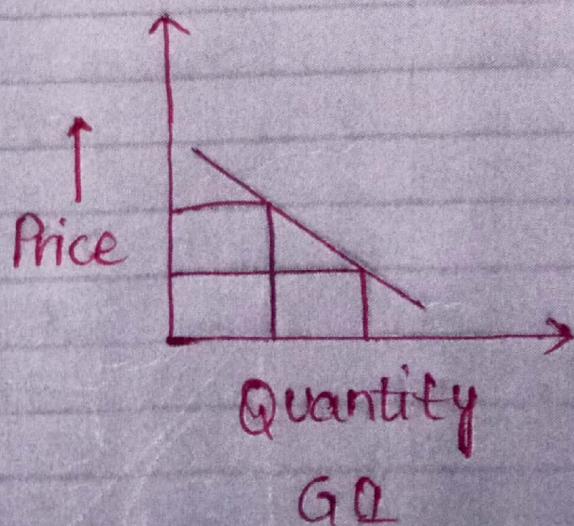
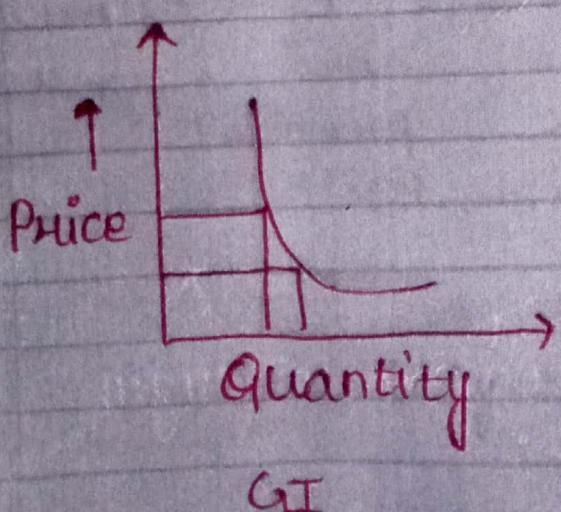
D → demography

P → Product's price.

Non durable Consumer goods :-

- (a) Postponement / Replacement
- (b) depends on other facilities
- (c) Joint demand
- (d) decision Making / influence
- (e) Replacement demand
- (f) Price / Credit Condition.

* Law of demand :- Law of demand states that other things being equal the demand for a good extend with a fall in its own price, in other word there is an inverse relationship between own price of commodity and its quantity demanded



For GI :- Negative relationship between quantity and price (Negative slope)

For GI :- Slope simply showing downward curve.

* Assumptions of law of demand :-

- (1) No change in tastes and preferences of consumers]
- (2) Consumer's income must remain the same]. Marshall assumed the money income should not change. Milton Friedman thinks that real income should remain constant.
- (3) The prices of the commodities related to the commodity in demand should not change.
- (4) There should be no change in the wealth of the consumers or their tastes.

* Criticism :- The law of demand posits a negative relationship between the price of a good and quantity demanded if all other factors are held constant. This cornerstone of microeconomics explains that consumer more if the price is lower.

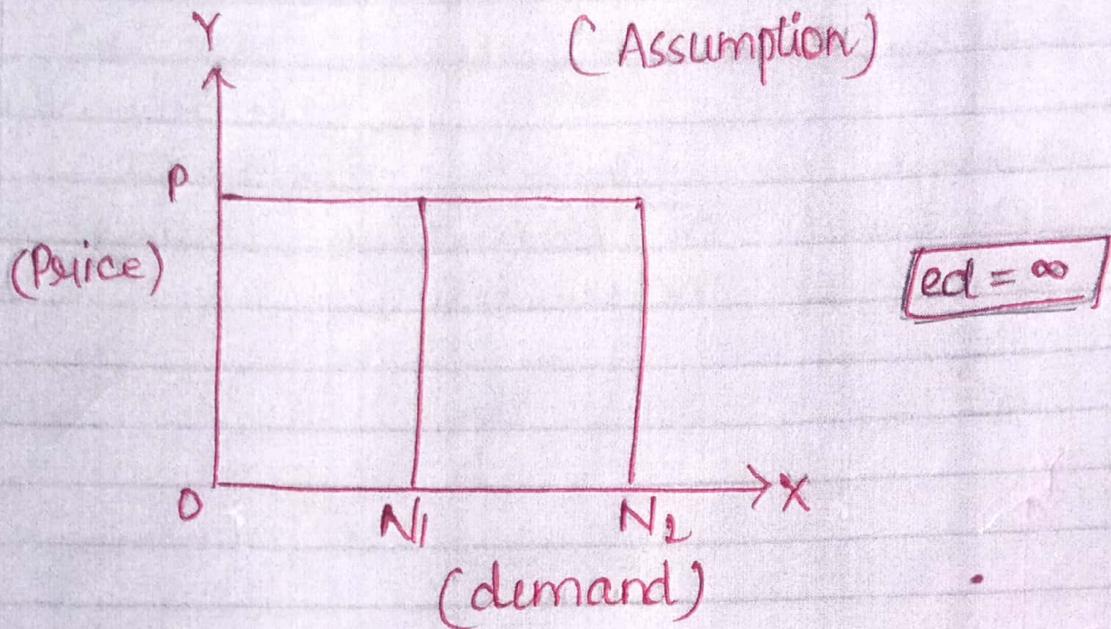
* Elasticity of demand :- Elasticity of demand is the measure of the degree of change in the amount demanded of commodity in response to a given change in price of the commodity, price of related good or changes in consumer income.

$$\text{Elasticity of demand} = \frac{\text{proportionate change in demand}}{\text{proportionate change in price}}$$

* Degree of price elasticity of demand :-

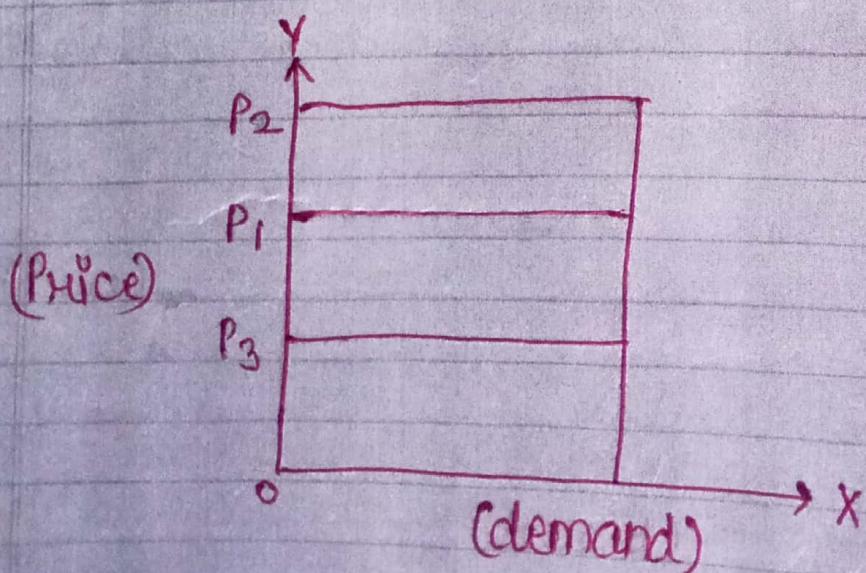
(1) Perfectly elastic Demand :- It refers to the situation when demand of commodity is infinite at the prevailing price. A slightest increase in price by the seller causes the demand of the commodity to fall to zero.

P	Bx
10	10
10	20
10	30
10	40

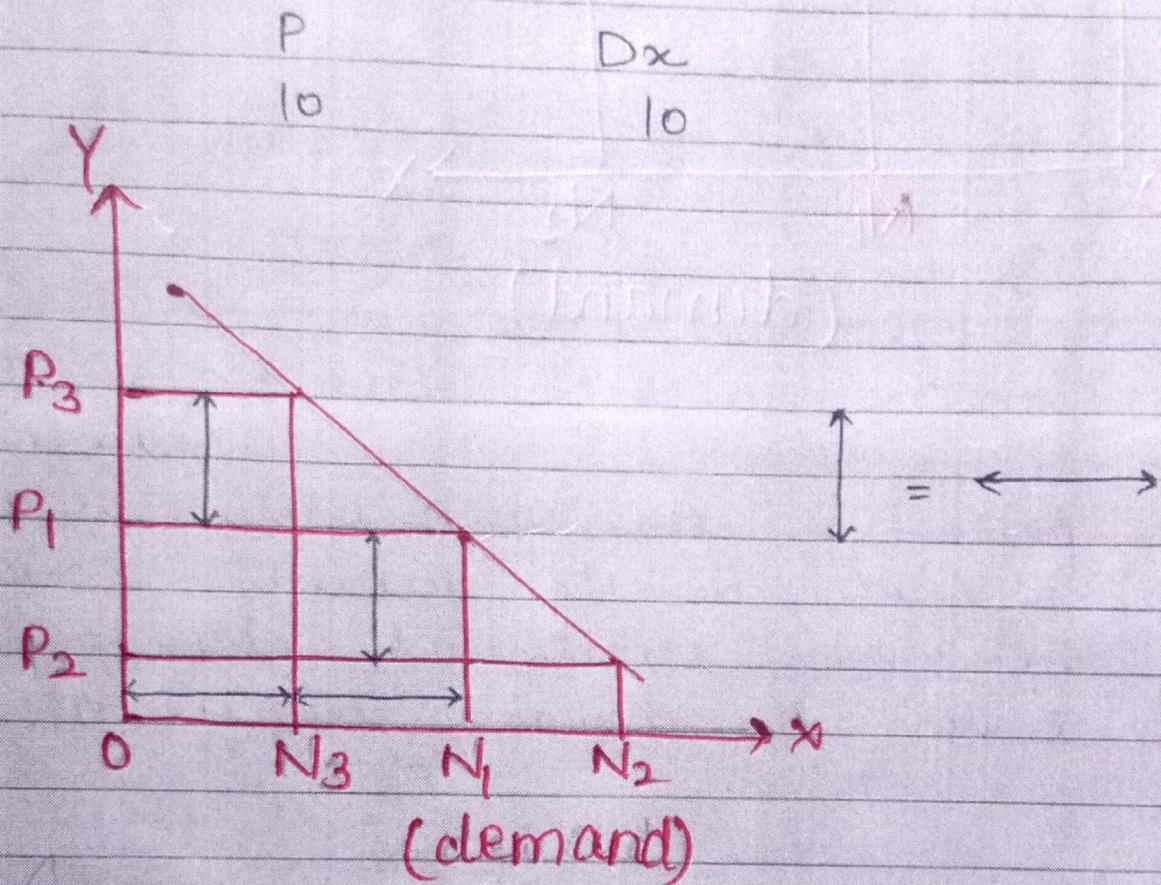


(2) Perfectly inelastic Demand:- In this case change in price of the commodity causes no change in its quantity demanded i.e. when substantial change in price leave the demand unaffected.

P	Dx
10	10
20	10
30	10
40	10



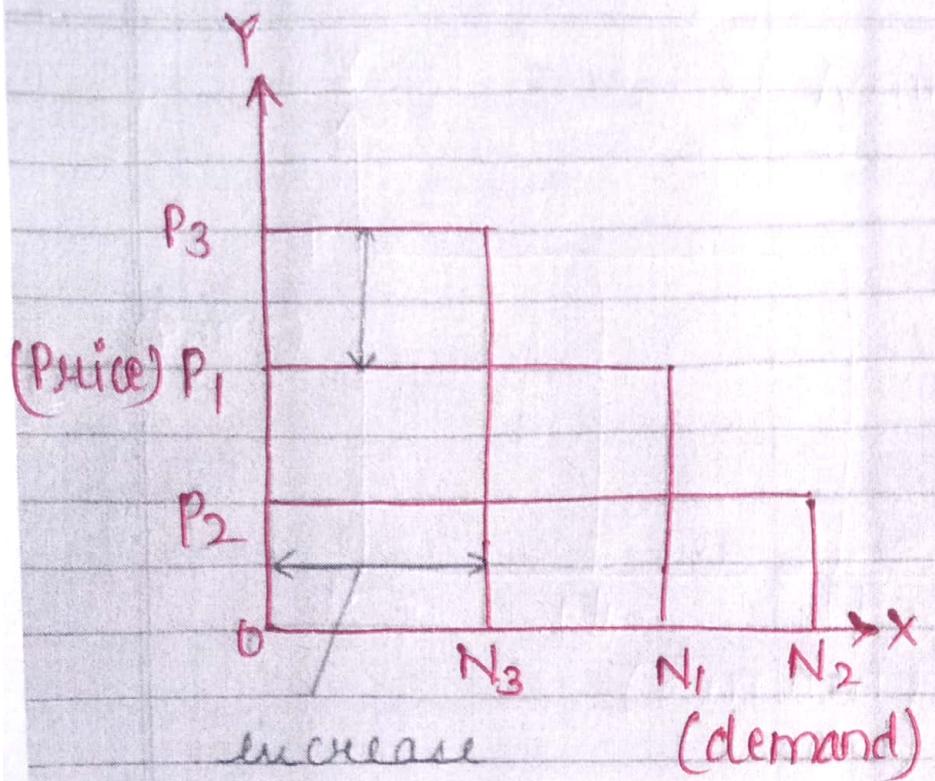
(3) Unitary Elastic Demand :- In this case percentage change in quantity demanded is equal to percentage change in price of commodity.



(4) Highly elastic Demand :- In this case percentage change in quantity demanded is greater than percentage change in price of commodity.

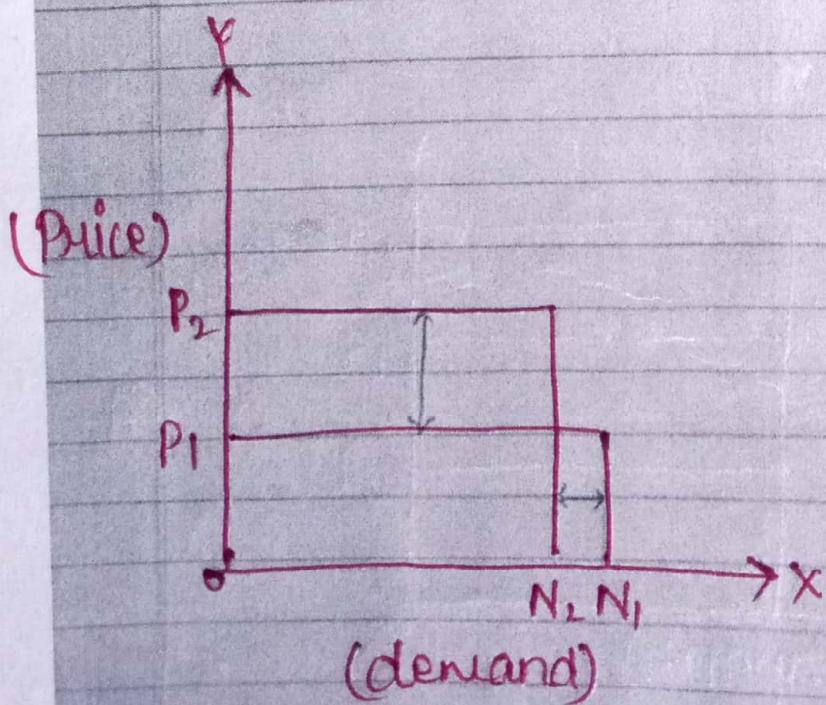
P	Dx	e.g.-
100	100	
150	25	

~~e.g.~~ Price arises by 50%, demand falls by 75%.



(5) Relatively inelastic demand :- In this case percentage change in quantity demanded is less than percentage change in price of commodity.

P	Dx
100	100
150	80



e.g. If price rises by 50%.
demand falls by 25%.

* Methods to measure price elasticity of demand:-

(1) Percentage Method or Proportionate Method:-

According to this method price elasticity of demand is measured by the ratio of proportionate change in quantity demanded of a commodity to proportionate change in its price.

$$E_{DA} = \frac{\Delta D / D}{\Delta P / P}$$

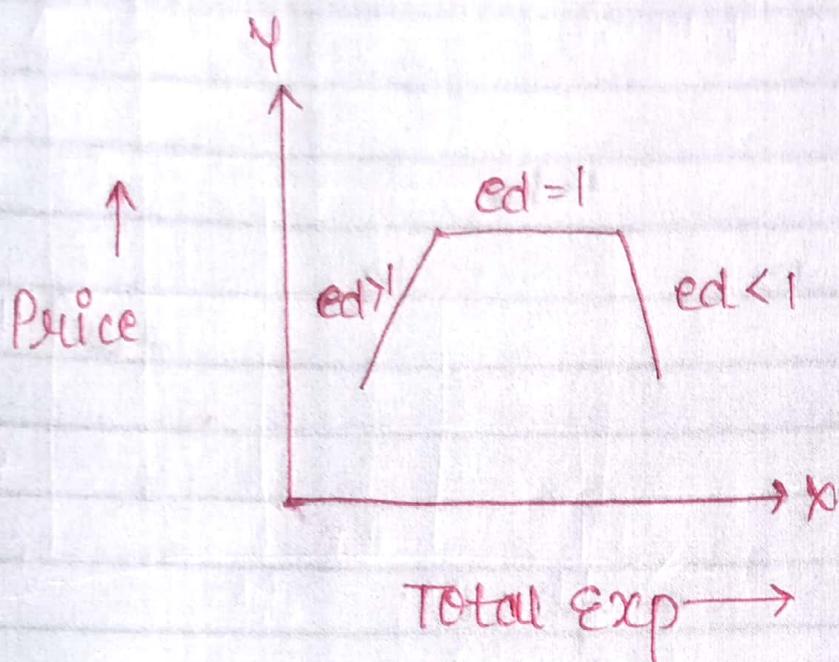
$$P_{ed} = \frac{\% \text{ age of } \Delta \text{ in } Q_D}{\% \text{ age of } \Delta \text{ in } P_x}$$

(2) Total Expenditure or Total Outlay Method :-

(i) $\uparrow P = T. \text{Exp} \text{ (constant)}$
 $ed = 1$

(ii) $\uparrow P = T. \text{Exp} \text{ (increase)}$
 $ed < 1$

(iii) $\uparrow P = T. \text{Exp} \text{ (decrease)}$
 $ed > 1$

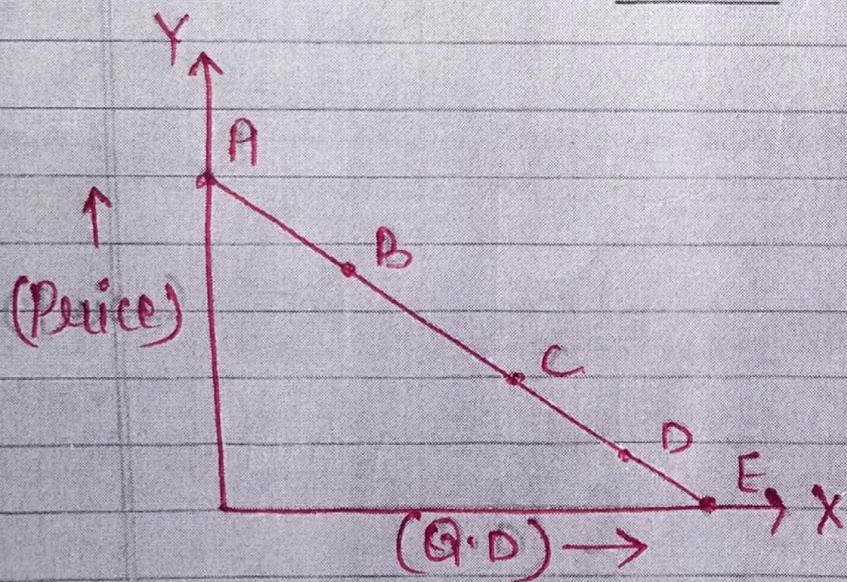


Price (P)	Quantity demanded	Total Expenditure
1	10	10
2	9	18
3	8	24
4	7	28
5	6	30
6	5	30
7	4	28
8	3	24
9	2	18
10	1	10

Change in price of goods causes change in total expenditure spent by consumer on the good Under this method we study the effect of change in price of commodity on its total expenditure.

- (i) $Ped < 1$ when with fall in price Total expenditure fall and with rise in price total expenditure also rise.
- (ii) $Ped = 1$ when with rise or fall in price total expenditure will remain same as its constant.
- (iii) $Ped > 1$ when with the fall in price total expenditure increases and vice-versa.

(3) Geometry, graphic or point Method :-



$Ped = \frac{\text{lower segment of demand curve}}{\text{upper segment of demand curve}}$

$$Ped(A) = \frac{AE}{O} = \infty$$

$$Ped(B) = \frac{BE}{AB} > 1$$

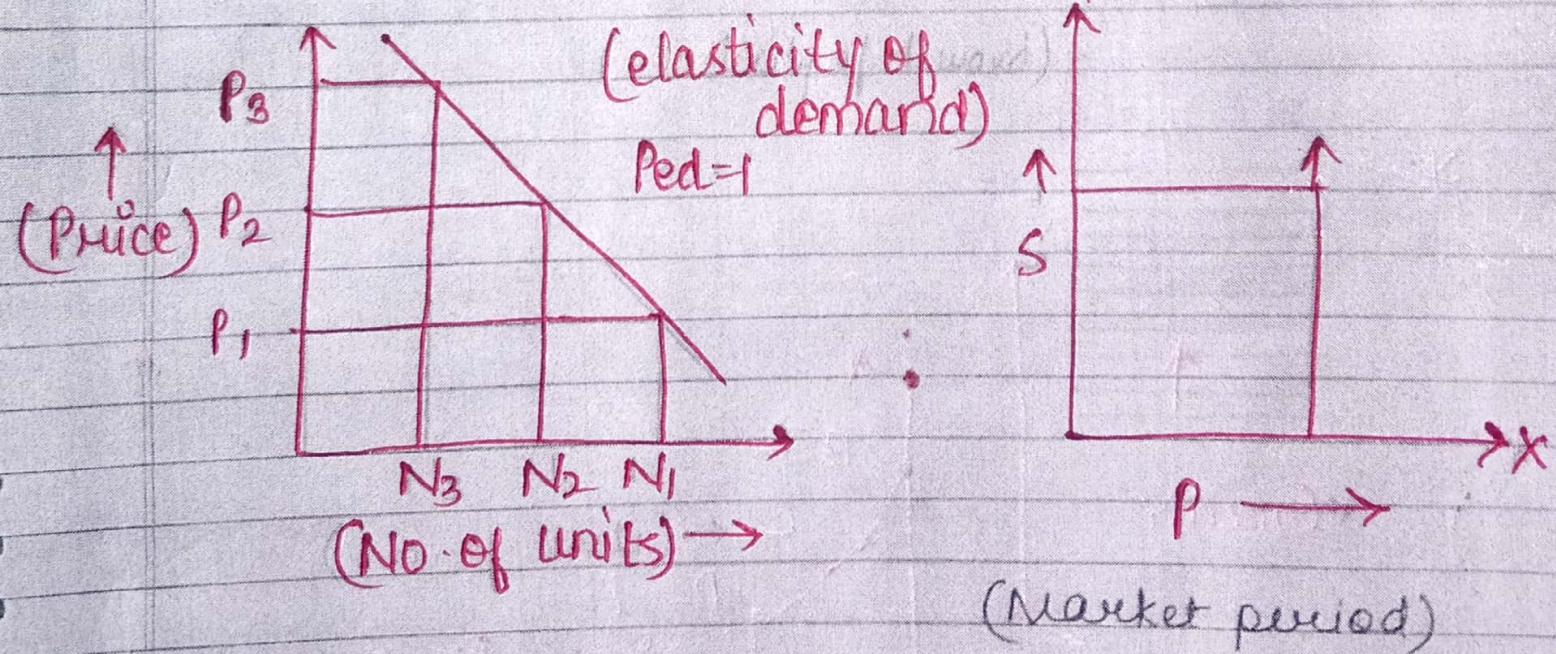
$$\text{Ped}(C) = \frac{CE}{AC} = 1$$

$$\text{Ped}(D) = \frac{DE}{AD} < 1$$

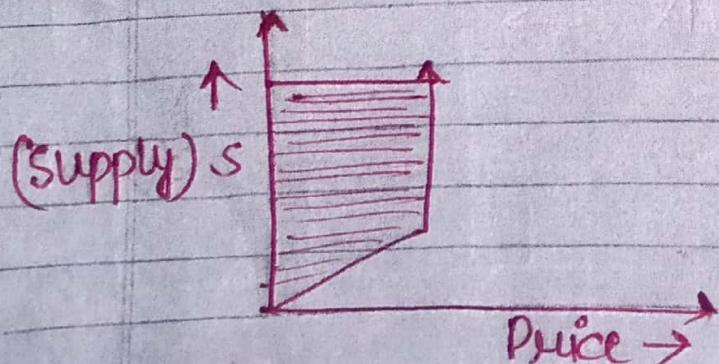
$$\text{Ped}(E) = \frac{O}{EA} = 0$$

* Elasticity in Market, short and in long period :-

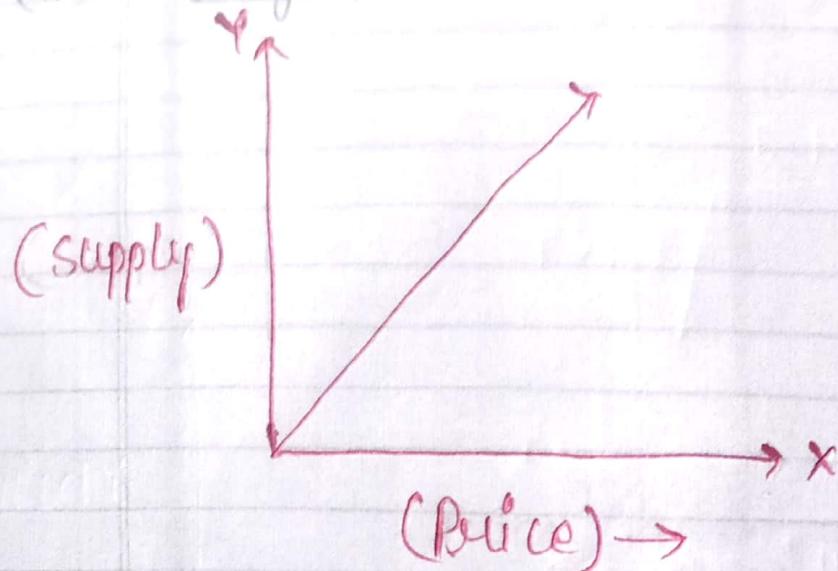
(i) Market period :-



(ii) short period :-

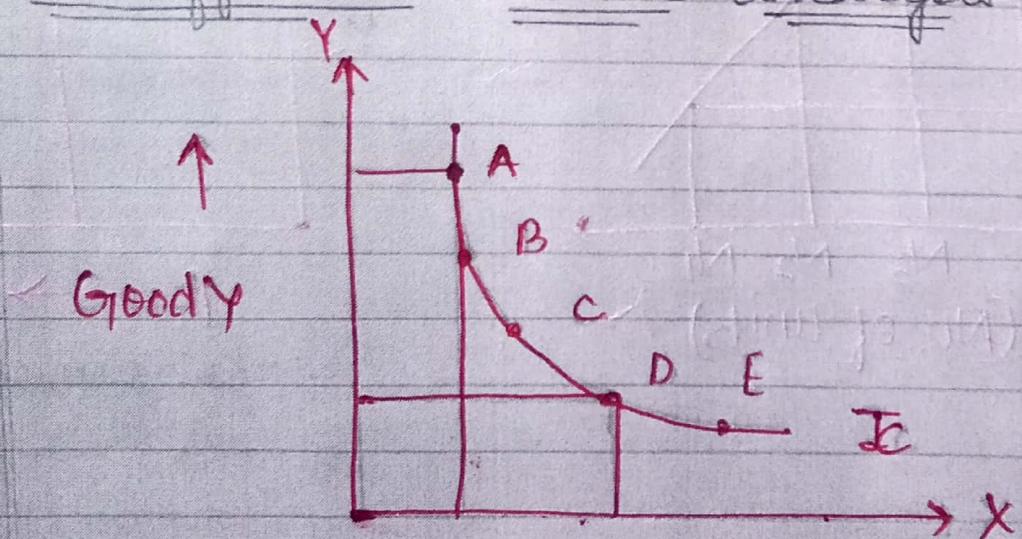


(iii) Long period :-



Long period, short period does not depend on the number of days but it depends on the production.

* Indifference Curve Analysis :-



Good X →

The Indifference curve is a locus of different points representing such bundles of two goods.

Among which the consumer is
indifferent
{ satisfaction level is same? }

$$1 + 20 \text{ (A)}$$

$$2 + 15 \text{ (B)}$$

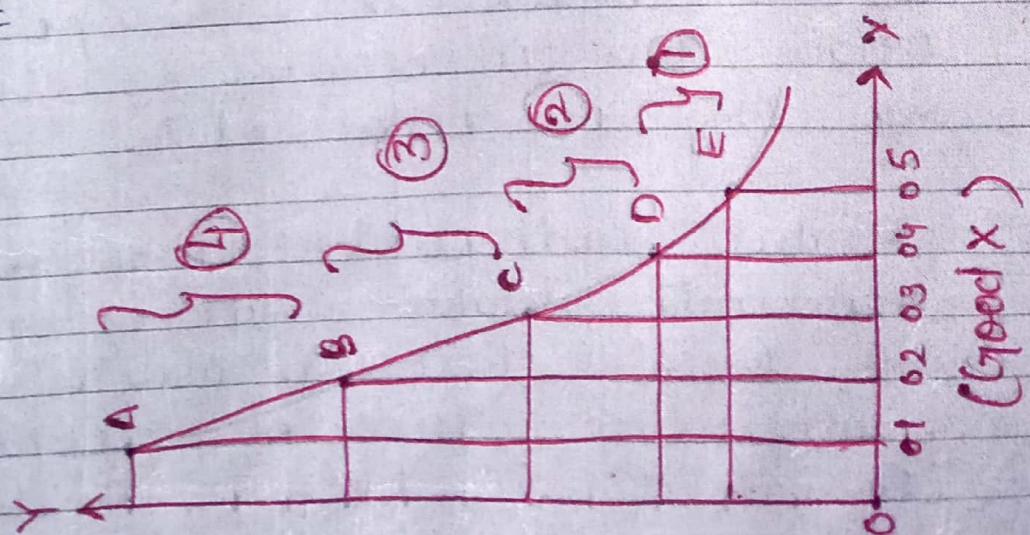
$$3 + 10 \text{ (C)}$$

$$4 + 05 \text{ (D)}$$

Indifference Schedule :-

✓ MRS - Marginal Rate of Substitution

Bundles	Good X	Marginal Gain of Good Y	MRS = $\frac{\text{Gain of Y}}{\text{Gain of X}}$
A	1	12	$4/1 = 4$
B	2	8	$3/1 = 3$
C	3	5	$2/1 = 2$
D	4	3	$1/1 = 1$
E	5	2	



$$\Sigma = 0.001000000000000002$$

(Good Y)

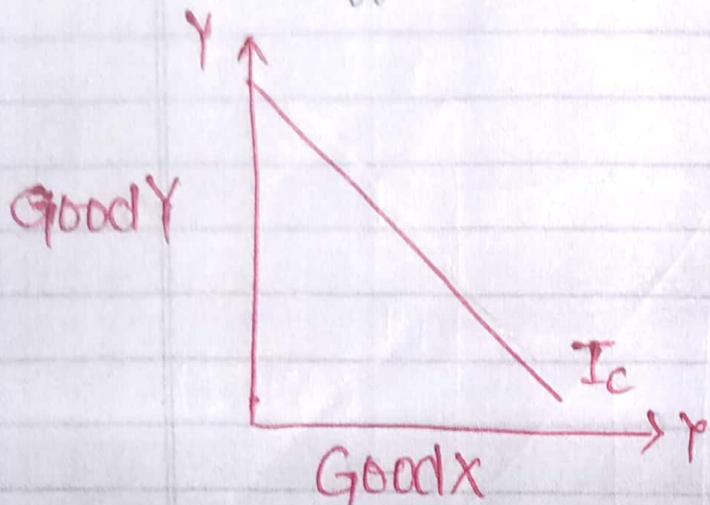
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MRS = slope of indifference curve

* Properties of indifference Curve :-

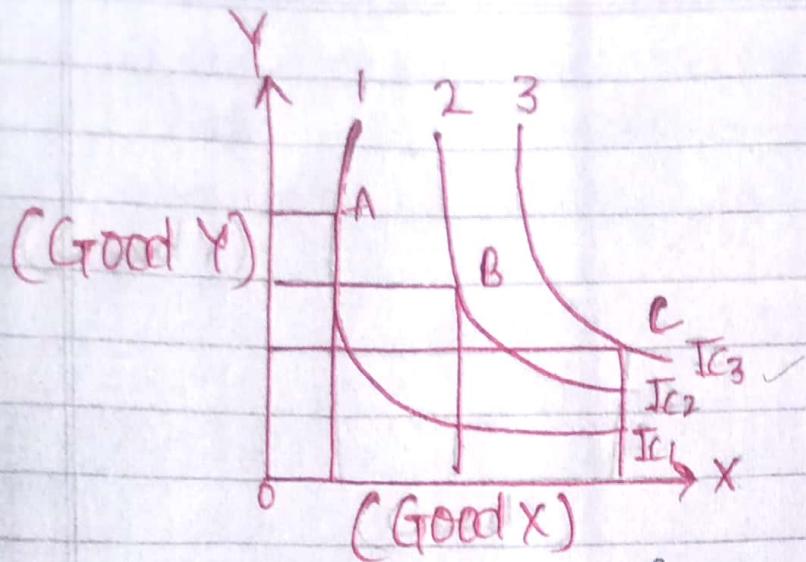
- (1) Indifference curve slopes downwards.



Not possible
∴ MRS is Constant.

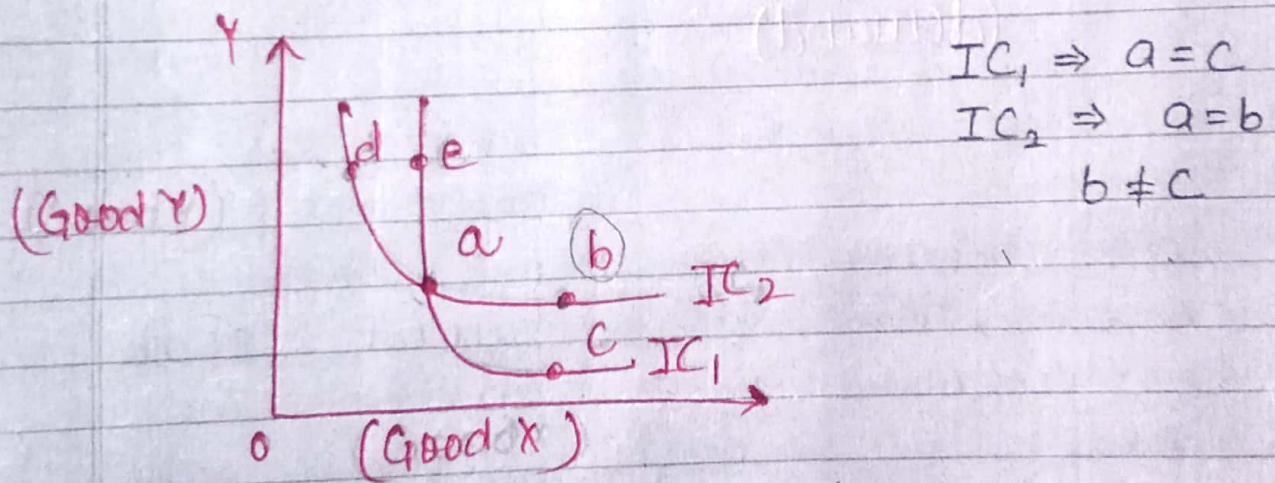
It means I_c has negative slope this is because if consumers wants to have one more unit of one good he will have to reduce the number of units of another good in order to maintain equal level of satisfaction.

- (2) I_c is convex to the point of origin. This is because of decreasing M.R.S on slope of I_c .
- (3) Higher indifference curve depends represents higher level of satisfaction. When there is greater no. of indifference curves are present then it is known as indifference map.



No. of goods in IC_3 is greater as compared to IC_1 and IC_2 . So, we prefer IC_3 ($A < B < C$)

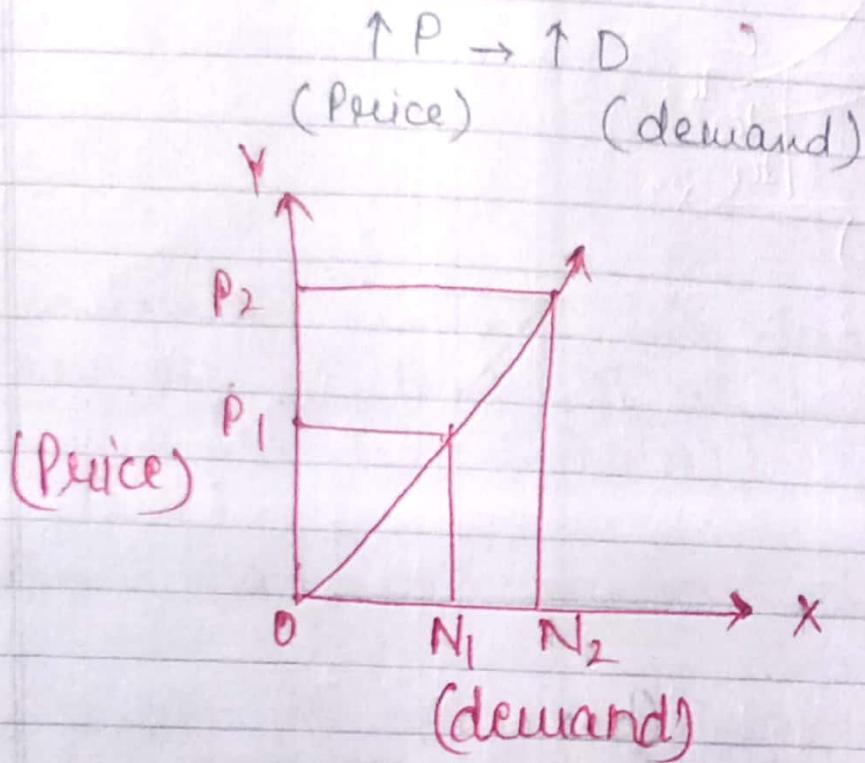
- (4) Indifference curve cannot intersect each other.



Satisfaction level of $b > c$.
So, we will select or prefer point b.

* Giffen's paradox :- It states that for some special kind of inferior goods the amount demanded does not rise with fall in their price rather the situation is opposite to that amount demanded

for with fall in price. This concept is opposite to the belief held of law of demand.



* Consumer Surplus :- When the consumer derives more satisfaction from the consumption of a good than the amount of sacrifice he makes in monetary terms while getting it.

e.g. If a person is ready to spend Rs 1000 for movie ticket but he only gets the ticket for Rs 200 in this case a person gets surplus over what he was willing to pay and what he actually has to pay.

Consumer Surplus = Total Utility -
 [Market price × No. of units consumed]

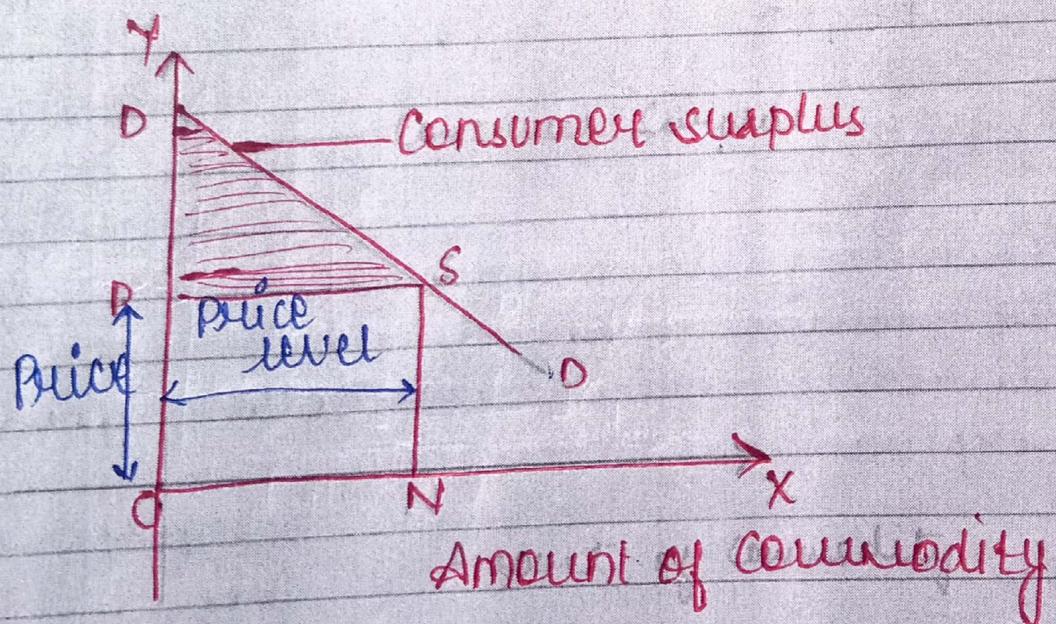
Eg

Utility	S.P
20 - 10	10
18 - 10	8
15 - 10	5
10 - 10	0

$$\text{Consumer surplus} = 63 - (10 \times 4)$$

$$= 63 - 40$$

$$\boxed{\text{Consumer Surplus} = 23}$$



DD is the demand curve which shows the amount of money which the consumers are ready to pay for the commodity. Price is assumed to be OP. PS is the price level at price OP consumer purchases ON units of commodity.

* The total utility derived is
ODSN.

$\Gamma \rightarrow$ (Sacrifice)

ODSN > OSEN

*	Normal goods	Inferior goods	Giffen goods
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Income +ve	$Y \uparrow, D \uparrow$	$Y \uparrow, D \downarrow$	$Y \uparrow, D \downarrow$
Effect	$Y \downarrow, D \uparrow$	$Y \downarrow, D \uparrow$	$Y \downarrow, D \uparrow$

Price -ve	$P \uparrow, D \downarrow$	$P \uparrow, D \downarrow$	$P \uparrow, D \downarrow$
Effect	$P \downarrow, D \uparrow$	$P \downarrow, D \uparrow$	$P \downarrow, D \uparrow$

* Engel's Law of Economics :-

According to Engel's law the share of income spent on food decreases even if total food expenditure rises.

Observations	T.E	Exp. on foods	Prop. of T.E on food (%)
1	100	75	75.00
2	150	100	66.67
3	250	115	46.00
4	320	125	32.89

This law similarly states that lower income household spend

a greater proportion of their available income on food other than middle or higher income household.

As household income percentage of income spent on food decrease while the proportion of other goods rises.

OR :

When percentage of income allocated for food purchase decreases as income rises.

Percentage expenditure on luxuries and other goods increases.

Conclusion:-

- (1) As income increases, the percentage on necessities of life decrease and vice versa
- (2) Percentage expenditure on luxuries and other cultural and recreational wants increases with an increase in income and decreases when income decrease.
- (3) As for lodging or rent, fuel and light, percentage expenditure is generally the same for all incomes.
- (4) Whatever the income, percentage outlay on clothing is practically