

When a ~~total~~ consumer is willing and able to purchase a fixed quantity of a commodity at various prices in market is called demand

When a single individual is willing and able is individual demand.

Unit-1

* Basic demand and supply analysis :-

→ Demand $\longleftrightarrow$ Individual demand
↓
Market demand curve

relation b/w qty
and supply

- Ceteris paribus assumption
(keeping other factors constant)

Market demand = the
sum of all the indiv.
demands for a particular
good or service

→ Factors affecting dc :- (Individual Demand)

- price of the commodity (Law of demand) (When other things are constant, when price rises demand decreases)
- consumer's income
- (Necessary goods, normal goods, inferior goods) used in place of other (tea, coffee, petrol, cloth)
- price of related good → substitutes and complements
- future expectation of buyers (E) those which have joint demand (eg DB)
- change in taste and preferences (T)
- No. of consumers in the market Market Demand → size & composition of population
→ season and weather
(I) → Distribution of income

* Demand schedule :- A market ds is a table showing the quantity of a commodity that consumers are willing and able to purchase over a given period of time at each price of the commodity, while holding constant all other relevant economic variables on which demand depends. (C.P.A)

Example	Price of burger	Quantity demanded per day
	2	2
	1.5	4
	1	6
	0.75	7
	0.5	8

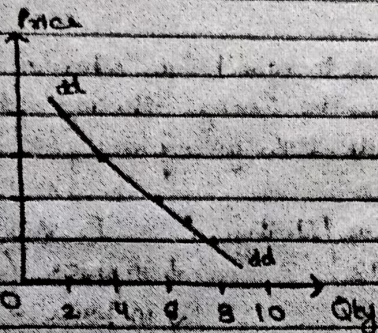
$$\text{Slope of Demand Curve} = \frac{\Delta P}{\Delta Q}$$

* Taste and preference are subjective, when favourable demand will increase and vice-versa.

* Distribution of Income is equal so demand will increase, unequal distribution will lead to poverty so demand will decrease.

Demand Curve is downward sloping:

- i) Law of DMU
- ii) Substitution effect if $P_n \uparrow D_y \uparrow$
- iii) Income effect if $P_n \uparrow I$ seems less
- iv) Additional consumers if $P \downarrow D \uparrow$ coz affordability increases.



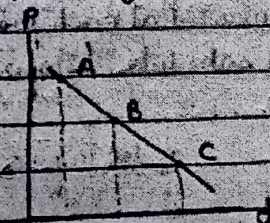
* Δ in qty dd' ed and change in dd

$\rightarrow$ change in the dd curve

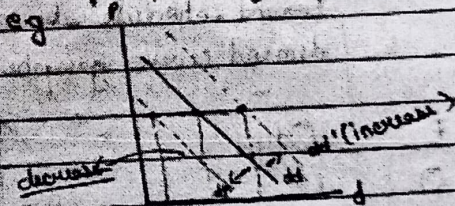
movement along the same dd curve

changes in due to price of same commodity

due to other factors affecting dd except price of commodity

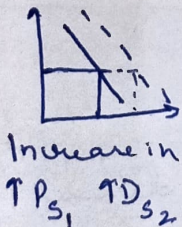


change of dd from A to B or C to A



change in the curve from dd to dd' or dd to dd'

it causes change in qty w/o change in the price of good itself



Increase in P_{S_1} $\uparrow D_{S_2}$



$\downarrow P_{S_2}$ $\downarrow D_{S_2}$
leftward shift

change in & Demanded (movement)
change in Demand (shift)

Exception to Law of Demand

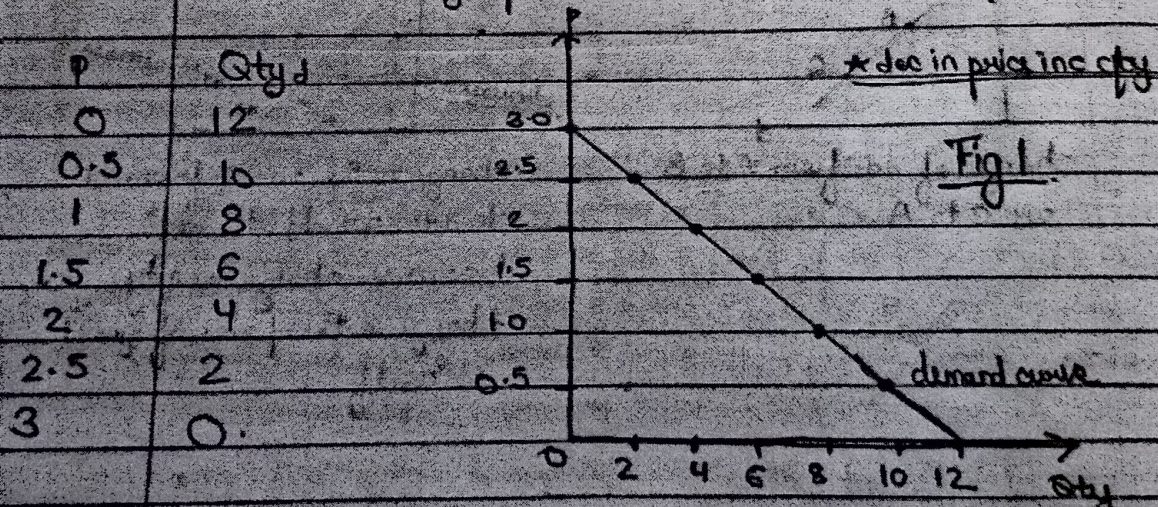
1. Ignorance: Consumer is unaware of prevailing price and may buy at higher cost.
2. Status Symbol: For status people may make
3. Necessities
4. Urgent Demand
5. Giffen Goods: Special inferior goods on which a large amount of income is spent. If P ↑, Qd ↑ eg: jawar, Bajra etc.

★ Equilibrium :- A market is in equilibrium when no buyer or seller has any incentive to change the qty of the commodity that he or she buys or sells at the given price.

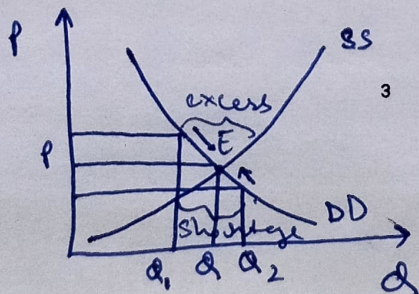
Price	Q _D	Q _S	Surplus/Shortage	Pressure in Price
2	2	14	12	↓ in price } disequilibrium
1.5	4	10	6	↓ in price } disequilibrium
1	6	6	—	equilibrium
0.75	7	4	-3	↑ in price } disequilibrium
0.5	8	2	-6	↑ in price } disequilibrium

★ Market demand Versus Individual demand

Demand schedule shows the qty demanded at each price.
demand curve graphs the demand schedule (slopes downwards).



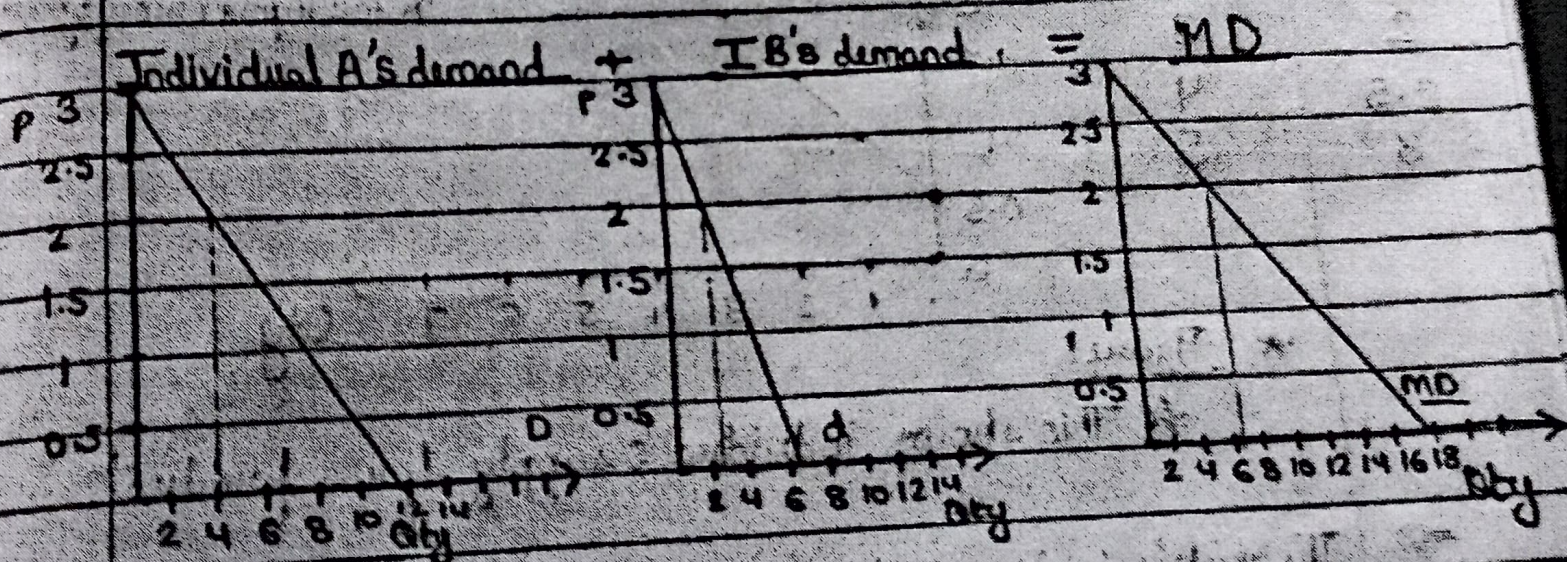
★ This shows individual's demand for a product.



The table in Fig 2 shows the demand schedules for the product of two individuals in this market.

The graph in fig. 2 shows the demand curves that correspond to these demand schedules.

P	Individual A	+	IB	=	Market
0	12	+	7	=	19
0.5	10		6		16
1	8		5		13
1.5	6		4		10
2	4		3		7
2.5	2		2		4
3	0		1		1



When a seller is willing to sell a fix quantity of a commodity at various price in market at a given period of time.

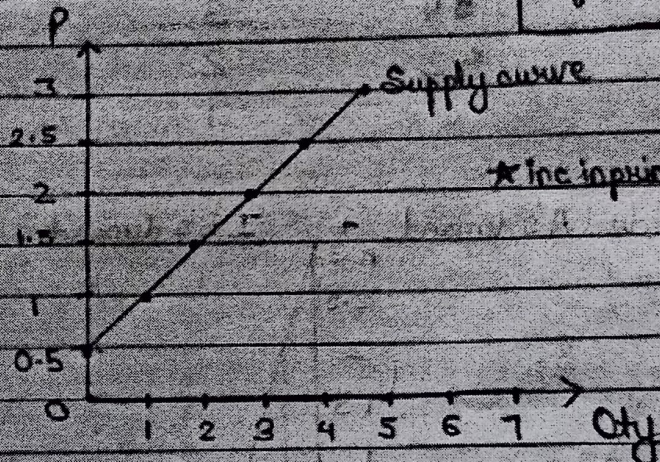
* Supply

* The Supply Curve :- The Relationship b/w Price and Qty supplied

⇒ Supply schedule :- a table that shows the relationship b/w the price of a good and the qty supplied.
(slopes upward)

Law of supply :- the claim that, other things being equal, the qty supplied of a good rises when the price of the good rises.

P	Qty of cone
0	0
0.5	0
1	1
1.5	2
2	3
2.5	4
3	5



* Figure 1

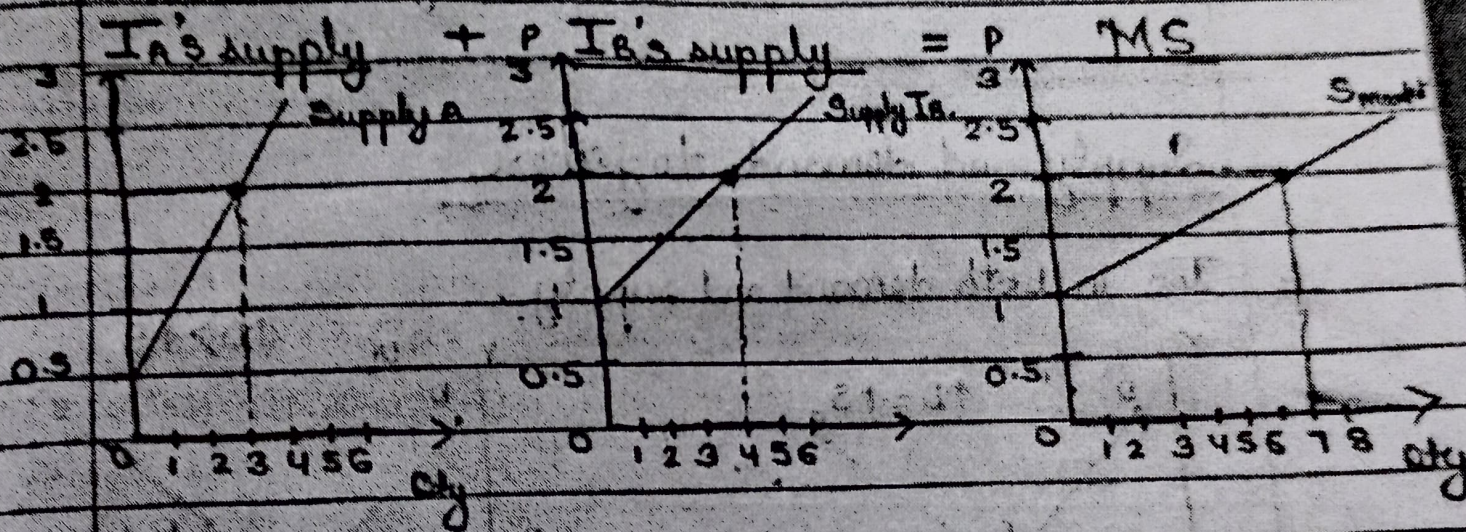
* This shows individual's supply for a product.

⇒ The table in Fig 2 shows the supply schedules for the two producers in the market.

The graph in Fig 2 shows the supply curves that correspond to the supply schedules.

Law of Supply: other things remaining constant, with increase in price, supply increases

P	I_A	I_B	Market
0	0	0	0 cones
0.5	0	0	0
1	1	0	1
1.5	2	2	4
2	3	4	7
2.5	4	6	10
3	5	8	13



* Shifts in the supply curve

1) Input prices = For ex in an ice cream factory various inputs include cream, sugar, flavouring, etc.

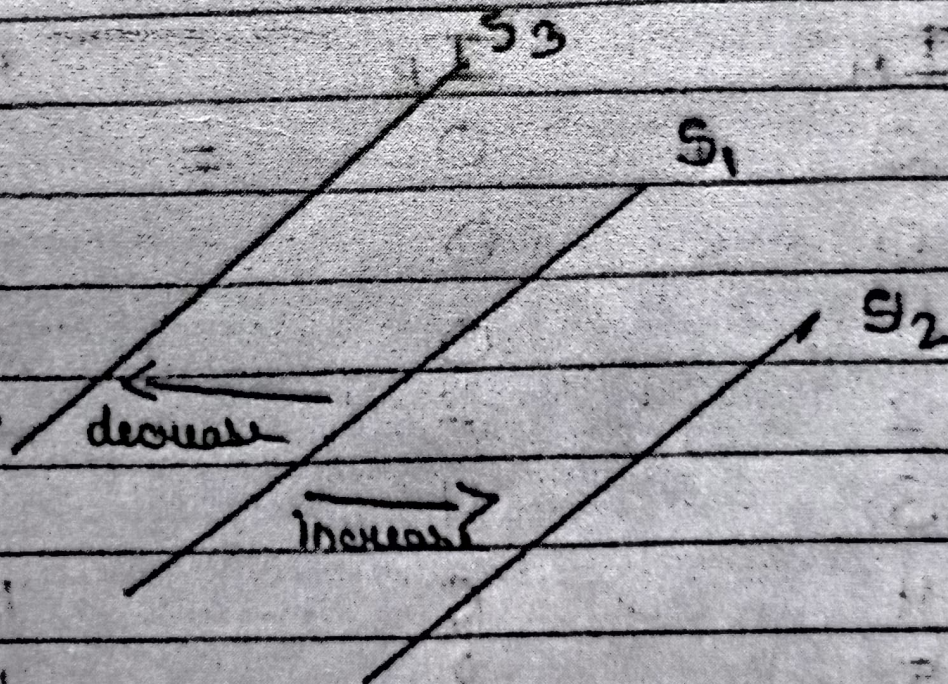
Supply $\downarrow$ with inc in input prices.

2) Technology = Supply $\uparrow$ with advancements in technology

3) Expectations = If a firm expects the price of a product to rise in the future, it'll supply less to the market today

4) Number of sellers = Supply $\downarrow$ with dec in sellers.

P.



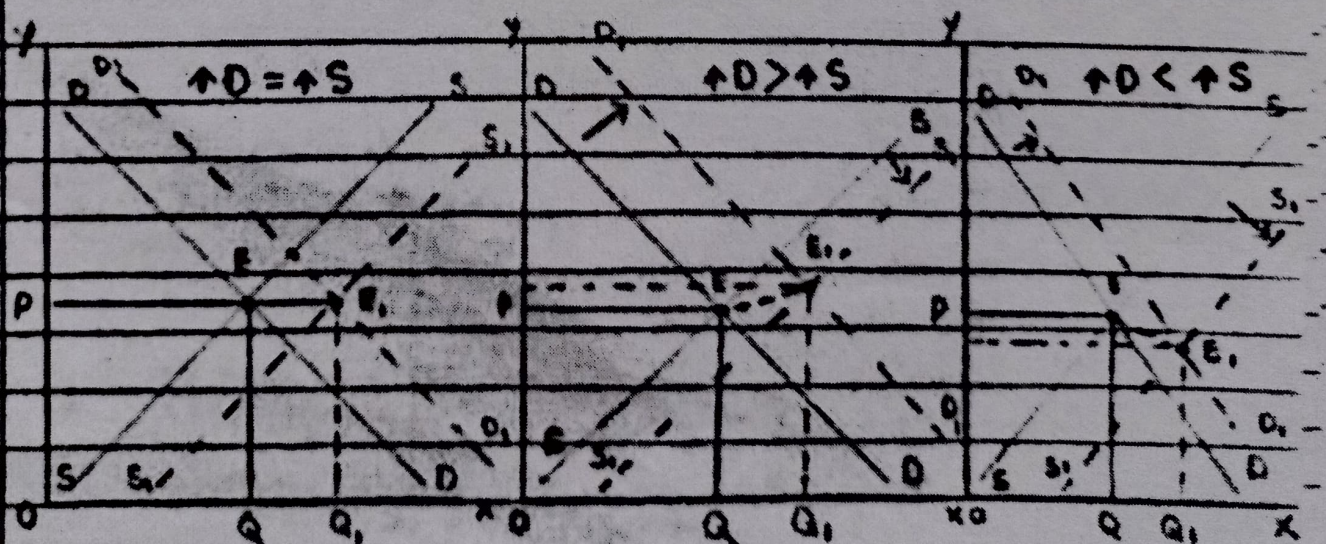
Qty

Ans!

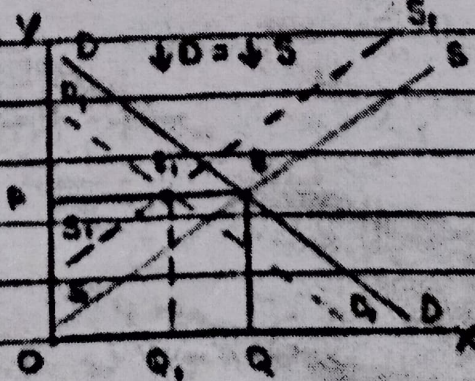
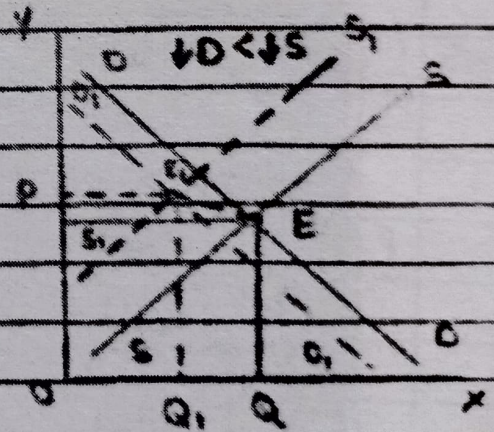
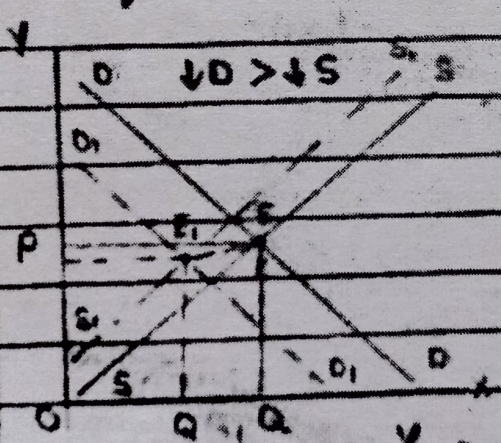
When both demand and supply of a good or service change at the same time, it can lead to a variety of outcomes in the market. The specific outcome will depend on the magnitude and direction of the changes in both demand and supply.

Here are a few cases of change in demand and supply simultaneously :-

1. Increase in both demand and supply :- If both demand and supply increase at the same time, the equilibrium quantity of the good will increase, but the effect on price is ambiguous. If the increase in demand is larger than the increase in supply, then the price will increase. If the increase in supply is larger, then the price will decrease. If the increase in demand and supply are equal, then the price will remain the same.

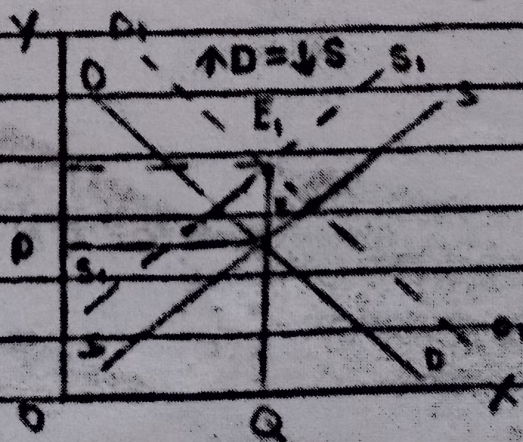
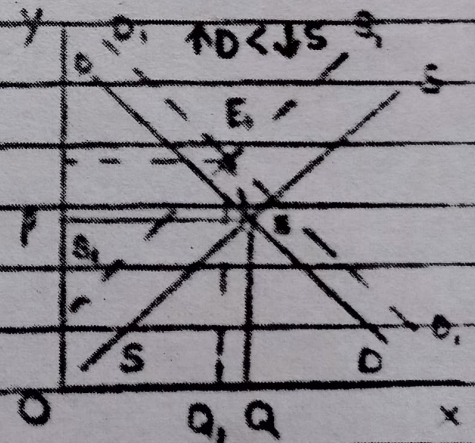
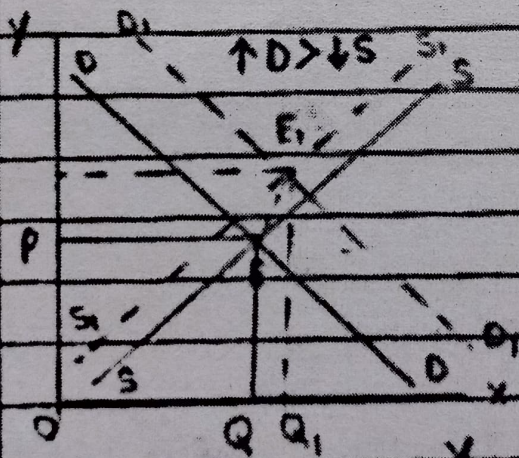


- 2 Decrease in both demand and supply :- If both demand and supply decrease at the same time, the equilibrium quantity will decrease. When the magnitudes of the decrease in both demand and supply are equal, it leads to a proportionate shift of both demand and supply curve and the equilibrium price remains the same. When the decrease in demand is greater than the decrease in supply, the demand curve shifts more towards left and there is a fall in both equilibrium quantity and price. To a case in which the decrease in demand is smaller, the leftward shift of the demand curve is less and there is a rise in equilibrium price.



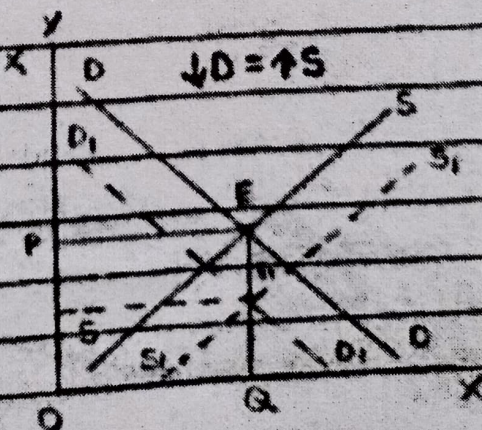
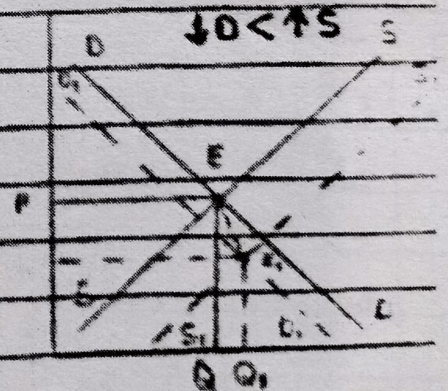
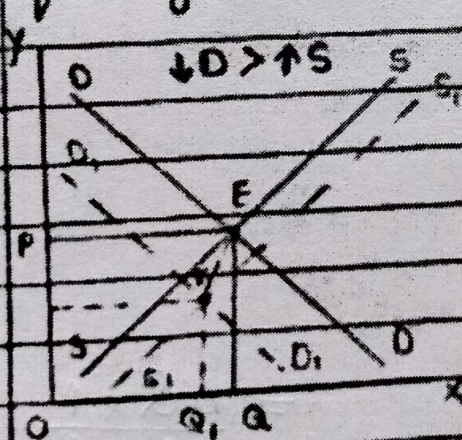
3. Increase in demand and decrease in supply :-

If demand increases while supply decreases, the equilibrium price of the good or service will increase, but the effect on quantity is ambiguous. If the increase in demand is larger than the decrease in supply, then the equilibrium quantity will increase. If the decrease in supply is larger than the increase in demand, then the equilibrium quantity will decrease. When the increase in demand is equal to the decrease in supply, the shifts in both curves are equal. Equilibrium quantity remains the same.



4. Decrease in Demand and Increase in Supply :-

If demand decreases while supply increases, the equilibrium price of the good or service will decrease, but the effect on quantity is again ambiguous. When the decrease in demand is greater than the increase in supply, the relative shift of demand curve is proportionately more than the supply curve and the equilibrium price will fall. When the decrease in demand is smaller than the increase in supply, the leftward shift of the demand curve is less, then the equilibrium quantity rises. When the decrease in demand is equal to the increase in supply, the shifts in both curves are equal. Equilibrium quantity remains the same.



* Elasticity of demand and supply

→ Elasticity is a measure of how much buyers and sellers respond to changes in market conditions.

* Price elasticity of demand = a measure of how much the quantity demanded of a good responds to a change in the price of that good, computed as the percentage change in quantity demanded divided by the percentage change in price.

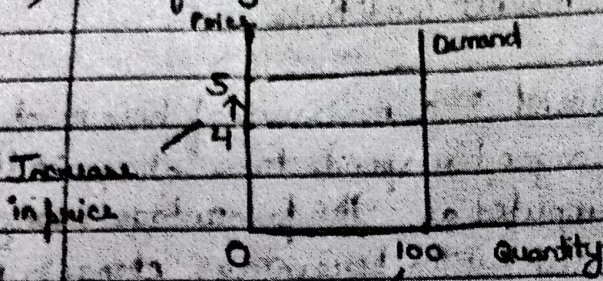
* Factors affecting price elasticity:

1. Availability of closer substitutes = Goods with close substitutes tend to have more elastic demand because it is easier for consumers to switch from that good to others.
2. Necessities versus luxuries = Necessities have inelastic demand while luxuries have elastic demands.
3. Time horizon = • More elastic demand over longer time horizons.
 - When the price of gasoline rises, the quantity demanded falls slightly. Over time, however, people buy more fuel-efficient cars, and move closer to where they work. And so after some years, the quantity demanded falls substantially.

* Computing Price elasticity =
$$\frac{\frac{\Delta Q}{Q}}{\frac{\Delta P}{P}} = \frac{\Delta Q \times P}{\Delta P \times Q}$$

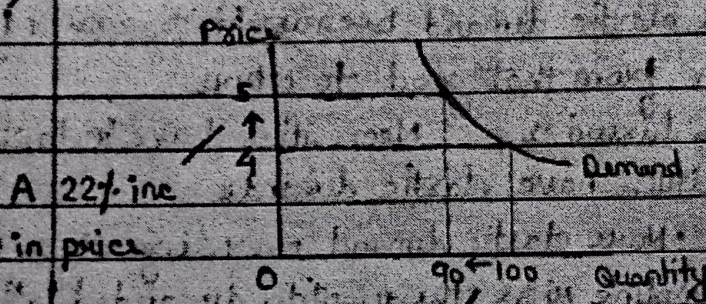
Variety of demand curves

a) Perfectly inelastic demand = Elasticity = 0



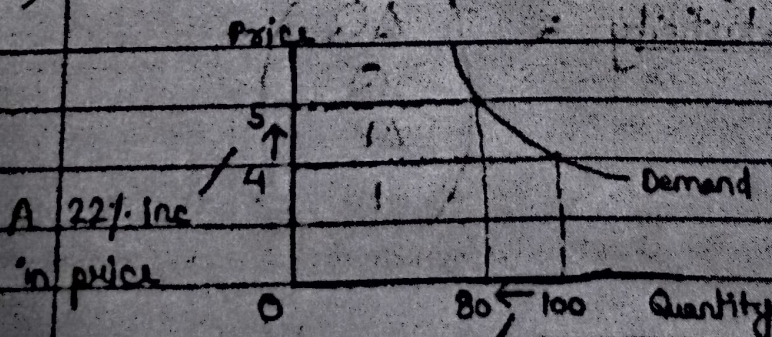
leaves the quantity demanded unchanged

b) Inelastic demand = $E_d < 1$

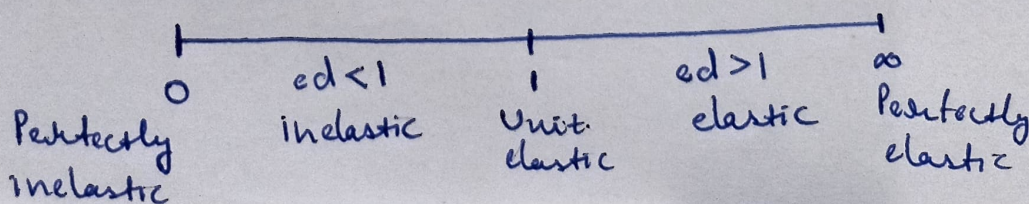


leads to an 11% decrease in quantity demanded

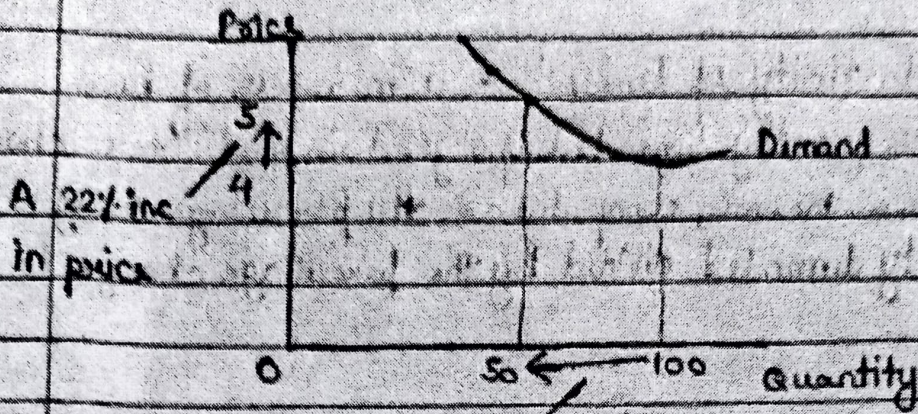
c) Unit Elastic Demand = Elasticity = 1



leads to a 22 1/2% dec in quantity demanded.

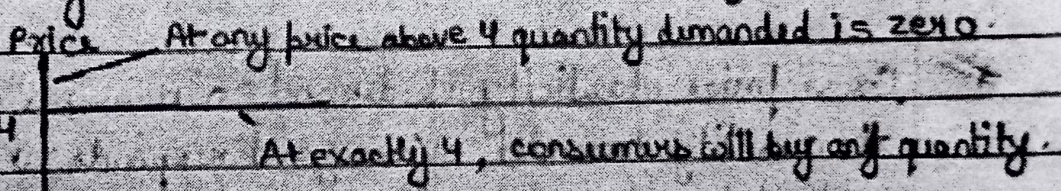


d) Elastic demand = $E_d > 1$



leads to a 50% dec in quantity demanded

e Perfectly elastic demand = Elasticity = ∞



At a price below 4, quantity demanded is infinite.

Total Revenue and the Price Elastic of Demand

P	Q	TR	E_d
2	0	0	∞
1.5	3	4.5	3
1.0	6	6.0	1
0.5	9	4.5	$1/3 < 1$ (less elastic) (inelastic)
0	12	0	0

★ Other demand elasticities

Income elasticity of demand = a measure of how much the quantity demanded of a good responds to a change in consumers' income, computed as the percentage change in quantity demanded divided by the percentage change in income.

Positive income elasticity deals with normal goods
 $\uparrow I \rightarrow \uparrow Q$ and vice versa

$$\Rightarrow \left(\frac{\frac{\Delta Q}{Q}}{\frac{\Delta I}{I}} \right) = \frac{\Delta Q \times I}{\Delta I \times Q}$$

< 1 Necessity goods / normal
 > 1 Luxury goods
 < 0 Inferior goods

Zero income elasticity deals with necessities
 Negative income elasticity deals with inferior goods
 $\uparrow Q, \downarrow I$ and vice versa

Cross price elasticity of demand = a measure of how much the quantity demanded of one good responds to a change in the price of another good, computed as the percentage change in quantity demanded of the first good divided by the percentage change in price of the second good.

$$\left(\frac{\frac{\Delta Q_x}{Q_x}}{\frac{\Delta P_y}{P_y}} \right) = \frac{\Delta Q_x \times P_y}{\Delta P_y \times Q_x}$$

$\Rightarrow 1.5$ (Substitutes) Example 1
 -1.5 (Complements)

$\Rightarrow$ Substitutes are goods that are typically used in place of one another.

$\Rightarrow$ Complements are goods that are typically used together.

Positive Degree: $\uparrow P_n, \uparrow D_y$ deals with substitute goods

Negative Degree: $\uparrow P_n, \downarrow D_y$ deals with complementary goods

Zero Degree: No change deals with goods not related to each other.

Ques Calculate price elasticity

P 8% ↓

Q ↑ by 20%

ans % change is given.

$$\therefore e_d = \frac{20}{8} = 2.5$$

$\therefore$ highly elastic

Ques P 10 8

Q 100 150

Calculate price elasticity of demand

$$\text{ans } e_d = \frac{-50}{(-2)} \times \frac{10}{100} = 2.5$$

Ques P = 10 ? $e_d = -2$

Q = 850 40

$$\text{ans } -2 = \frac{(-10)}{(x-10)} \times \frac{10}{50}$$

$$\Rightarrow 2 = \frac{100}{50(x-10)} = \frac{2}{x-10}$$

$$\Rightarrow x-10 = 1 \Rightarrow x = 11 \quad \underline{\underline{\Delta}}$$

Ques P = 12 10 8

Q = 10 11 12

TRE = 120 110 96

i) Price Elasticity at price 10 and 12

$$\text{ans } e_d = \frac{\Delta Q}{\Delta P} \times \frac{P}{Q} = \frac{-1}{-2} \times \frac{12}{10} = 0.6$$

Ques - Price ↓ by 2%, and TE ↑ by 3%.
 ans - since price and TE are moving in opposite direction, the dd is more than unitary elastic / inelastic ($|\epsilon_p| > 1$).

Ques	P	Q	TE	ED
	?	11	??	
	11	7	77	

due to same ED 1.

and since ϵ_p is same, TE is ?? & 77
 $\therefore P = 7$

* Elasticity of supply.

Elasticity of supply

Measures degree of change in supply with change in price.

$$E_s = \frac{\Delta S}{\Delta P} \times \frac{P}{S}$$