Economics

Explain Demand Theory?

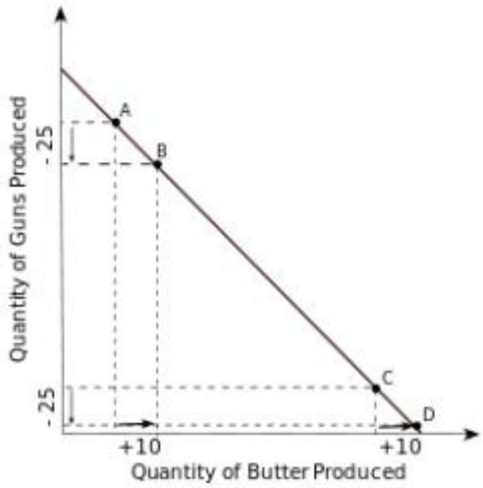
Ans: Demand theory is a fundamental concept in economics that explains the relationship between the price of a good or service and the quantity demanded by consumers.

Explain Demand Function ?

Ans: The demand function is a mathematical representation of the relationship between the price of a good (P) and the quantity demanded (Q) by consumers.
It is typically expressed as:
Q = f(P)
In this equation, Q represents the quantity demanded, and P represents the price of the good. The demand function shows how changes in the price of a good affect the quantity demanded by consumers while keeping other factors
unchanged.

Relationship between Price and Quantity Demanded?

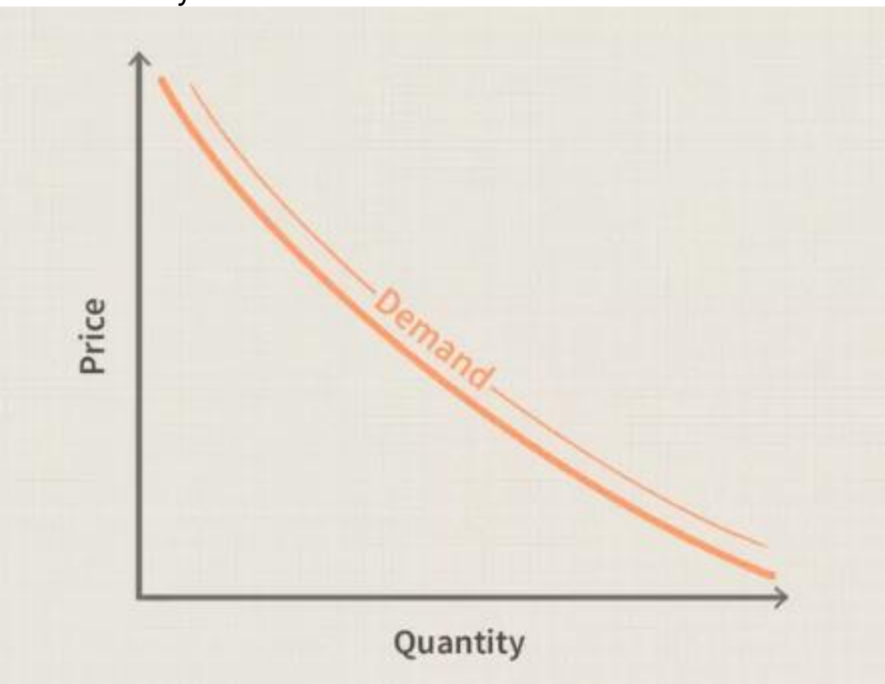
Ans: According to the law of demand, there is an inverse relationship between the price of a good and the quantity demanded. As the price of a good increases, the quantity demanded decreases, and vice versa, assuming that all other factors remain constant. This negative relationship is the foundation of demand theory.
Example:
Let's consider the demand for a specific product, say smartphones.
Suppose the demand function for smartphones is given by:
Q = 1000 - 50P
Where:
Q = Quantity demanded of smartphones
P = Price of smartphones



Slope Interpretation for demand

Ans:

1.The negative slope signifies an inverse relationship between the price (P) and the quantity demanded (Q)
2 .The graph is downward-sloping because of the negative slope
3.it describes the relationship between the price of a good and the quantity demanded by consumers.

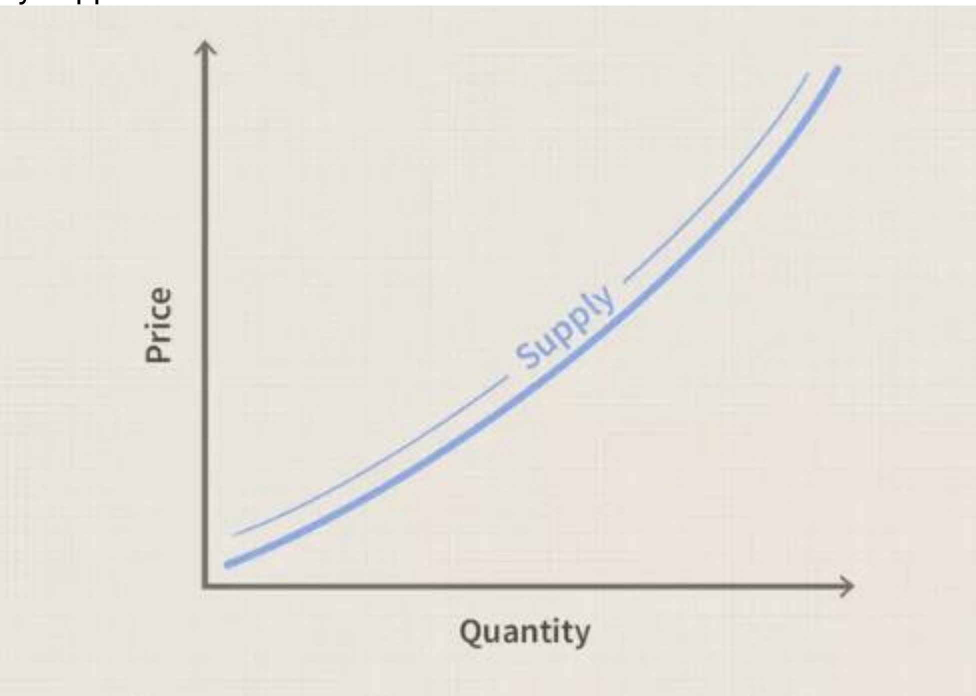


Slope Interpretation for Supply

Ans:

1.The + slope signifies a proportional relationship between the price (P) and the quantity demanded (Q)

2 .The graph is stepward-sloping because of the negative slope
3.it describes the relationship between the price of a good and the quantity supplied by supplier.



Why the Demand Curve is downward slope ?

Ans:

Reason:

1.Substitution Effect : When the price of a good decreases, it becomes relatively
cheaper compared to other goods in the market and When the price of a good increases, it becomes relatively expensive compared to other goods in the market .

2.Income Effect : When the price of a good decreases, consumers experience a
real increase in their purchasing power.When the price of a good increases, consumers experience a real decreases in their purchasing power.

Explain Substitute Good and Give Example.

Ans :

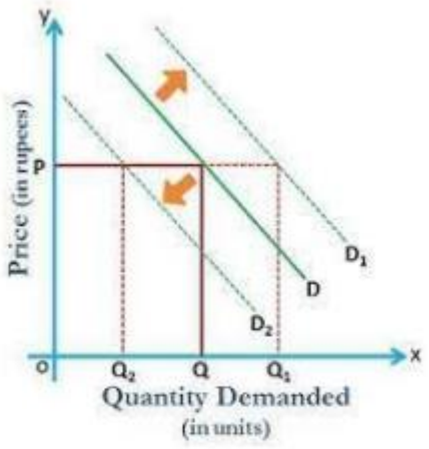
A substitute good is a product that can be used as an alternative to another product, with both products serving similar functions and having similar uses.

Example :

Let's say you love drinking coffee, but the price of coffee beans suddenly goes up due to a poor harvest. As a result, you may choose to buy tea instead, as it can provide a similar caffeine boost at a lower cost. In this scenario, **tea is a substitute good for coffee**, and as more people switch to tea, the demand for coffee will decrease.

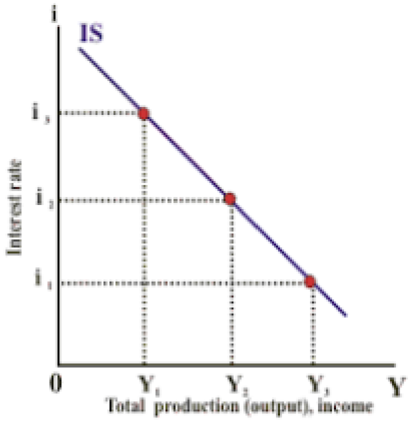
Explain complementary good and GIve Example.
Ans:
Complementary goods are two or more goods typically consumed or used together, such that a change in the price or availability of one good affects the demand for the other good.
Example:
A good example of complementary goods would be video games and gaming consoles. People who buy gaming consoles are more likely to buy video games to play on them, and vice versa. When a new gaming console is released, the demand for compatible video games usually increases as well. Similarly, when a new popular video game is released, the demand for the gaming console it is compatible with may also increase.

How a change in income will effect the quantity demand?
Ans :
1.Income :For most goods, as consumers income increases, their demand for these goods also increases and vice versa .



The income-demand curve, illustrates how the quantity demanded of a particular good or service changes as a consumer's income changes, while holding the price of that good constant.
It helps us understand how consumer demand for a specific product responds to changes in income.

Price: When the price of a good increases, the quantity demanded decreases, and as the price decreases, the quantity demanded increases

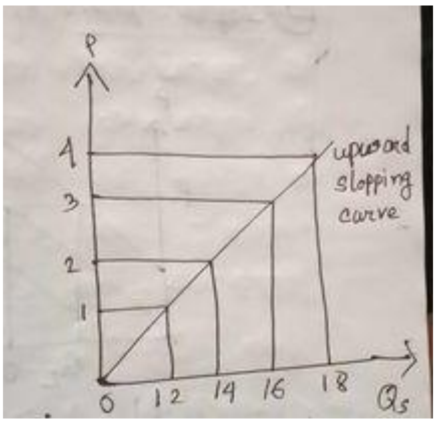


The demand curve typically slopes downward from left to right, indicating an inverse relationship between the price of a good or service and the quantity demanded. This means that as the price increases, the quantity demanded tends to decrease, and as the price decreases, the quantity demanded tends to increase.

Expalin Supply Theory ?

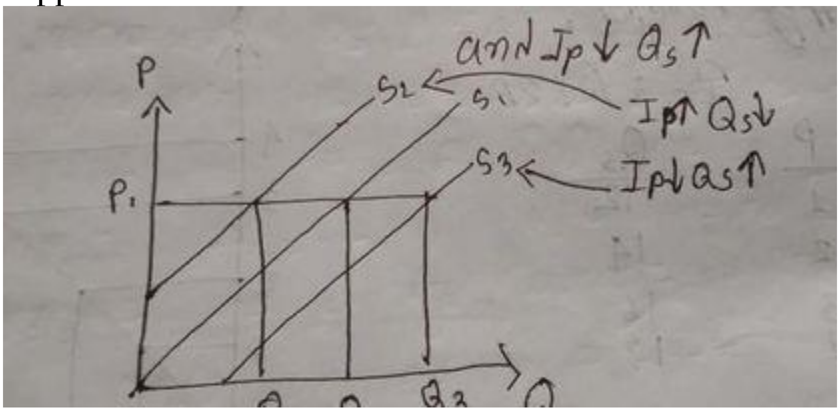
Ans:Defination : Supply theory is a fundamental concept in economics that explains the
relationship between the price of a good or service and the quantity supplied by producers.

Supply Function : The supply function is a mathematical representation of the relationship
between the price of a good (P) and the quantity supplied (Q) by producers. It is
typically expressed as:
Q = f(P)
In this equation, Q represents the quantity supplied, and P represents the price of the good.

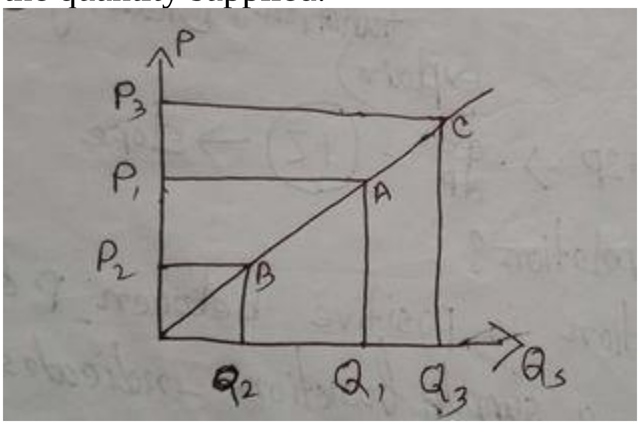


The supply curve slopes upward from left to right, indicating a direct relationship between price and quantity supplied. Producers are typically willing to supply more of a good or service as its price increases because it becomes more profitable.

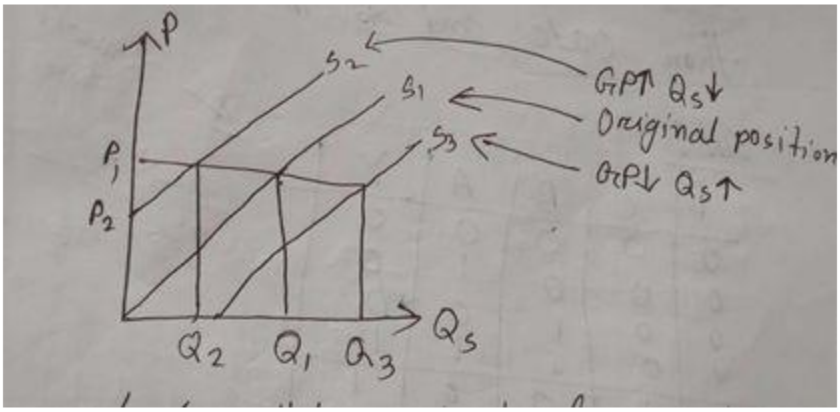
Supply Factors?
Ans :
Input Price: When input prices rise, the cost of production increases, which can lead to a decrease in the quantity supplied. Conversely, when input prices fall, production costs decrease, often resulting in an increase in the quantity supplied.



2. Price:
If the price of inputs increases, the cost of production rises, potentially leading to
a decrease in the quantity supplied at any given price level. Conversely, a decrease in input prices can reduce production costs, leading to an increase in the quantity supplied.



. Government Policies and Regulations:
Government policies and regulations can have a significant impact on the supply
of goods and services. Policies that promote business-friendly environments, reduce bureaucratic hurdles, and provide incentives for investment and production can lead to increased supply.



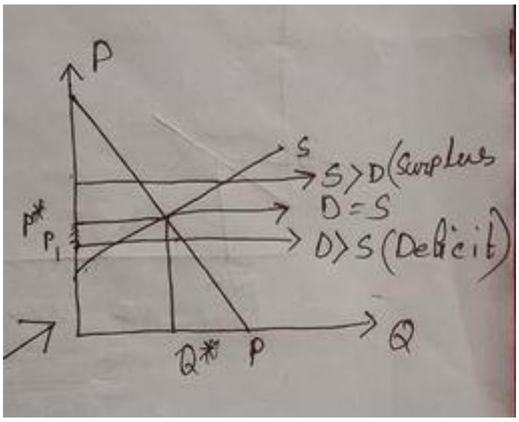
Explain equilibrium?
Ans :

Equilibrium: equilibrium in economics is a state where the supply of a good or service is equal to the demand for that good or service.

Surplus : A surplus occurs when the quantity supplied of a good or service exceeds the

quantity demanded.

Deficit : A deficit occurs when the quantity demanded of a good or service exceeds thequantity supplied.



It typically slopes upward from left to right, indicating that as the price of a good or service increases, the quantity supplied increases, and vice versa.

If the market price is above the equilibrium price, it creates a surplus. There is excess supply, and producers may be left with unsold goods.

If the market price is below the equilibrium price, it creates a deficit. There is excess demand, and consumers may find it challenging to purchase the product.

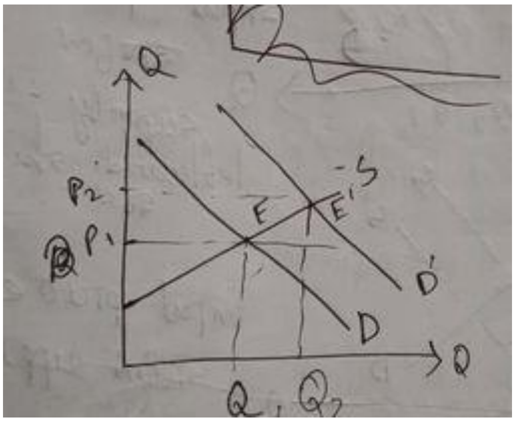
Explain the Effect of change in income on equilibrium price and quantity?

Ans :

Income : When the income of consumers increases, the demand for normal goods generally increases. This leads to a rightward shift of the demand curve. As a result, the equilibrium price and quantity both increase.

When the income of consumers decreases, the demand for normal goods generally decreases.

This leads to a leftward shift of the demand curve. As a result, the equilibrium price and quantity both decrease.

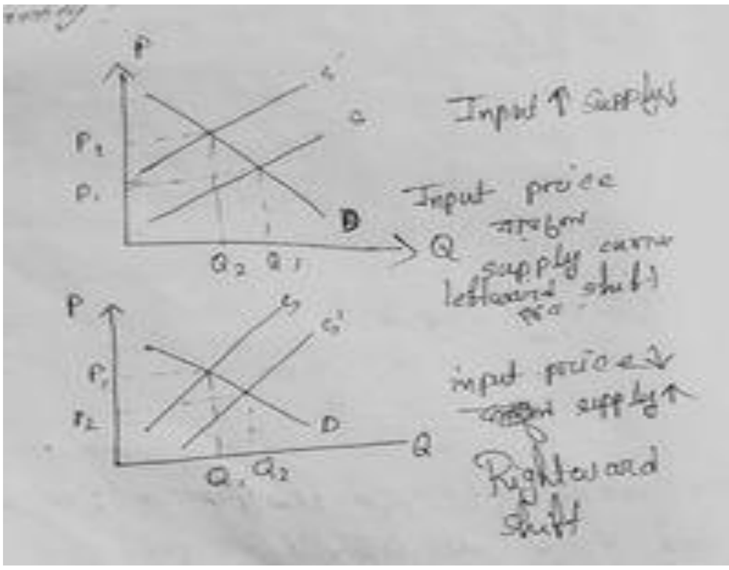


Explain the Effect of change in income on equilibrium price and quantity?

Ans:

Input Price : When the cost of the input used in production increases, the supply curve shifts leftward. This is because it becomes more expensive to produce the good, so producers are willing to supply a lower quantity at each price level.As a result, the equilibrium price increases, and the equilibrium quantity decreases.

When the cost of the input used in production decreases, the supply curve shifts rightward. This is because it becomes cheaper to produce the good, leading to a higher quantity supplied at each price level.As a result, the equilibrium price decreases, and the equilibrium quantity increases .



Explain different price elascity of demand /supply.

Ans :

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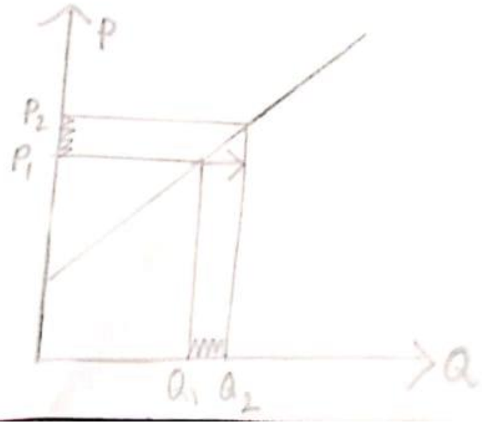
1. Describe price elasticity of supply with the help of diagrams.

=> Price elasticity of supply measures the responsiveness of quantity supplied to a change in price

$$E_p = \frac{\% \Delta Q}{\% \Delta P}$$ [price elasticity → E_p]

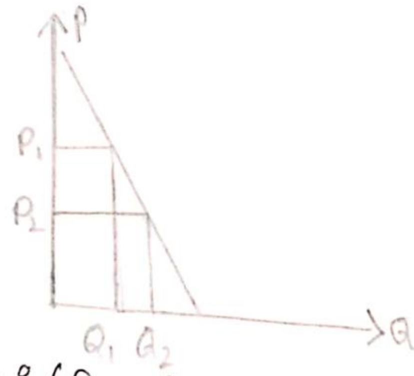
Elastic supply: ($E_p > 1$)

When the percentage change in quantity supplied is greater than percentage change in price, the supply is said to be elastic. This means that suppliers are highly responsive to change in price and the quantity supplied changes significantly in response to even a small change in price



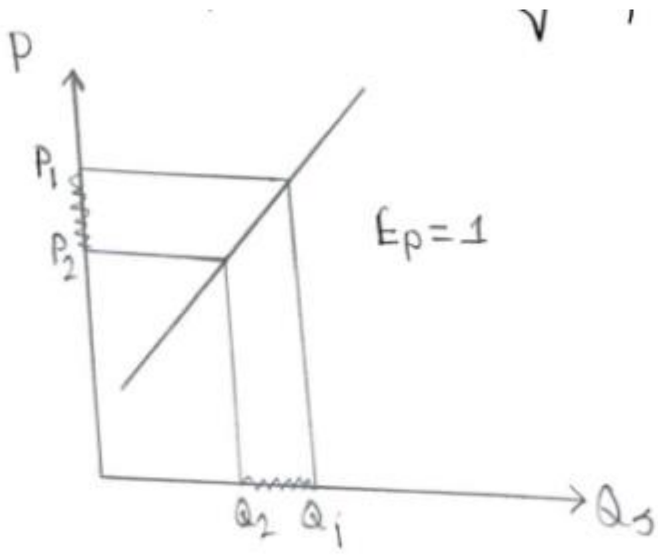
Inelastic supply: ($E_p < 1$)

When the percentage change in quantity supplied is less than the percentage change in price, the supply is said to be inelastic. This means that suppliers are not very responsive to changes only slightly in response to change in price



Unit Elastic: ($E_p = 1$)

When the percentage change in quantity supplied is exactly equal to the percentage change in price, the supply is said to be unit elastic. This means that the percentage change in quantity supplied is directly proportional to the percentage change in price.



When Demand is Price Inelastic:

Price inelastic demand implies that the percentage change in quantity demanded is less than the percentage change in price.

a) Price Decrease, Decrease in Total Revenue: When the price decreases, the percentage change in price is relatively greater than the percentage change in quantity demanded. As aresult, the decrease in price leads to a smaller proportional increase in quantity demanded. Since the increase in quantity demanded is not sufficient to compensate for the reduction in price, total revenue decreases.

b) Price Increase, Increase in Total Revenue: Conversely, when the price increases, the percentage change in price is relatively smaller than the percentage change in quantity demanded. This situation generates a smaller proportional decrease in quantity demanded. The decrease in quantity demanded is not significant enough to offset the positive effect of the higher price, resulting in an increase in total revenue.

When Demand is Price Elastic:

Price elastic demand means that the percentage change in quantity demanded is greater than the percentage change in price.

a) Price Decrease, Increase in Total Revenue: When the price decreases, the percentage change in price is relatively smaller than the percentage change in quantity demanded. This leads to a proportionally larger increase in quantity demanded, which more than compensates for the lower price. Consequently, total revenue increases.

b) Price Increase, Decrease in Total Revenue: Conversely, when the price increases, the percentage change in price is relatively larger than the percentage change in quantity demanded. As a result, the decrease in quantity demanded is proportionally larger than the increase in price, leading to a reduction in total revenue.

4. Calculate total surplus.

$P = 50 - Q$

$P = 20 + 2Q$

$\Rightarrow$ Equilibrium Condition,

$D = S$

$\Rightarrow 50 - Q = 20 + 2Q$

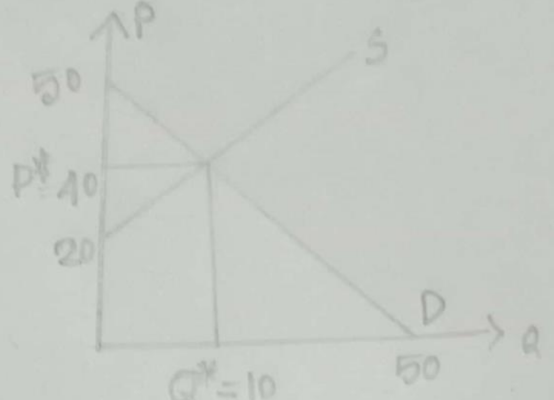
$\Rightarrow 3Q = 30$

$\therefore Q^* = 10$

$P = 20 + 2Q$

$= 20 + (2 \times 10)$

$= 40 = P^*$



$\therefore$ Consumer Surplus, $CS = \frac{1}{2} \times 10 \times (50 - 40)$

$= 50$

Producer Surplus, $PS = \frac{1}{2} \times (40 - 20) \times 10$

$= 100$

$\therefore$ Total Surplus, $TS = CS + PS$

$= 50 + 100$

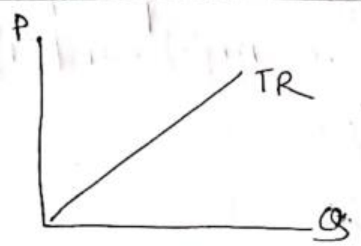
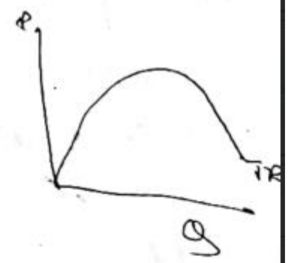
$= 150$

Ans

Explain the difference between perfect competition and monopoly market.

* Difference between Monopoly & Perfect Compet

Features	Monopoly	Perfect competition
i) Description	Extreme market situation where there is only one seller. He has no competition and so controls supply and price.	A direct competition between buyers and b sellers and sellers; finally buyers and sellers.
2) Buyers and sellers	Only one seller and practically all buyers depends on him. so, he has the absolute control over the Market.	Large number of b and sellers hence n sellers or buyers c alter the price in t Market.
3) Supply	Supply from only one seller.	Supply comes from lar number of seller.
4) Demand	Demand is inelastic. Demand curve slopes downward.	Demand is perfectly elastic.
5) product	NOT Homogeneous product	Homogeneous product
6) Nature of competition	No competition at all. No price or product competition.	Pure and perfect competition in price.

7) price	Higher price higher than all competitive prices $P > MR = MC$	Normal Price $P = MR = MC$
8) output	Small output fixed by the sole seller.	Large output fixed by $MR = MC$
9) Profit	Excess profit Monopoly gain.	Normal profit realised by price competition
10) Application	Pure Monopoly is rare	Quite unreal
11) Barriers for entry of new firms	It has strong restriction for the entry of new firms into the market	There is no restrictions for new firms to enter the market.
12) Sellers are known as	In this market, the sellers are price Makers	In this market, sellers are known as price takers
13) TR curve		

Economics MATH Elasticity (Type 1)

Q	ΔQ	P	ΔP	$\frac{Q_1+Q_2}{2}$	$\frac{P_1+P_2}{2}$	$E_p = \frac{\Delta Q}{(Q_1+Q_2)} \div \frac{\Delta P}{(P_1+P_2)}$
0		6				
10	10	4	2	5	5	$\frac{10}{5} \div \frac{2}{5} = 5$
20	10	2	2	15	3	$\frac{10}{15} \div \frac{2}{3} = 1$
30	10	0	2	25	1	$\frac{10}{25} \div \frac{2}{1} = 0,$

Here first one is elastic, second Unit elastic and last one is inelastic.

(Type-2) Price Elasticity: $E_p = \frac{\Delta Q}{Q} \div \frac{\Delta P}{P}$

$\Delta Q = Q_2 - Q_1 \qquad \Delta P = P_2 - P_1$

$Q = \frac{Q_2 + Q_1}{2} \qquad P = \frac{P_1 + P_2}{2}$

(*) $P_1 = 4$, $P_2 = 2$, $Q_1 = 10$, $Q_2 = 20$ find elasticity

$\Delta Q = 20 - 10 = 10 \qquad \Delta P = 4 - 2 = 2$

$Q = \frac{20+10}{2} = 15 \qquad Q = \frac{2+4}{2} = 3$

$E_p = \frac{10}{15} \div \frac{2}{3} = 1$; unit elastic

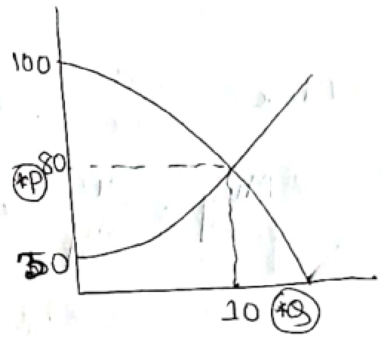
Type-3: Total surplus :

consumer surplus = CS
producer purplus = PS

Total surplus = CS + PS

(*) $P = 100 - 2Q$ (- চিহ্ন থাকলে demand curve)

$P = 30 + 5Q$ (supply curve)



$100 - 2Q = 30 + 5Q$

$Q^* = 10$

$P^* = 80$

$CS = \cancel{\frac{1}{2} \times Q \times} \left(\frac{1}{2} \times 10 \times (100 - 80)\right)$

$= 100$

$PS = \frac{1}{2} \times 10 \times (80 - 30) = 250$

$T.S = 100 + 250 = 350$

Type-4: Equillibrium price and Quantity

$Q = 30 - 2P$ (Demand)

$Q = 10 + 5P$ (supply)

at Equillibrium, D = S

$\Rightarrow 30 - 2P = 10 + 5P$

$\Rightarrow P^* = \frac{20}{7}$

Quantity $= \cancel{20}\ 30 - 2 \times \frac{20}{7}$

$= \frac{170}{7}$

Type-6: Perfect competition $P = MC \rightarrow$ cost & Marginal

$P = 100 - 2Q$ (Demand function)

$C = 10 + 2Q^2$ (cost function)

$MC = \frac{d}{dQ}(10 + 2Q^2) = 4Q$

$\therefore P = MC$

$100 - 2Q = 4Q$

$6Q = 100$

$\therefore Q = 50/3$

$P = 100 - 2 \times \frac{50}{3}$

$= \frac{200}{3}$

$\therefore$ In case of perfect competation

Equ. Pricee $= \frac{200}{3}$

Equ. Quantity $= \frac{50}{3}$

Explain Monopoly Market?

Solve:

A monopoly market describes a market situation where one company owns all the market share and can control prices and output. In a monopoly market, the seller faces no competition. There are no close substitutes. A monopoly market structure characterized by a single seller, selling a unique product in the market. A pure monopoly rarely occurs.

Some characteristics of a monopoly market are as follows.

- **Only One Seller:** A monopoly market is a form of market where the whole supply of a product is controlled by a single seller.
- **Many Buyers:** There are many buyers available in a monopoly market.
- **Entry Restrictions:** Another feature of a monopoly market is restrictions of entry. There is a restriction on the entry of new firms and exit of old firms. These restrictions can be of any form like economical, legal, institutional, artificial, etc.
- **Not Homogenous:** This market has no homogeneous products.
- **Seller Price Setter:** As the firms in this market are price setter, there is a possibility of price discrimination.

Explain Perfect Competition Market?

<u>Solve:</u>

Perfect competition is a market situation where a large number of buyers and sellers deal in a homogeneous product at a fixed price set by the market.

Some characteristics of a monopoly market are as follows.

1. **Many Sellers:** This market has a very large number of sellers
2. **Many Buyers:** There are many buyers available in a perfectly competitive market.
3. **No Restriction:** Perfectly competitive industries allow firms to easily enter and exit the industry. There is freedom of entry and exit in this market. No restriction available.
4. **Homogeneous:** This market has homogeneous products.
5. **Price Taker:** As each of the firms in this market is a price-taker, the price is uniform. The Equilibrium price is market dependent.