Economics:

The word economics is derived from Greek words, oiko and nomos meaning home and management respectively. We can also say that economics is the management of household affairs where household can be your house, company, country, etc.
Definition of economics can be "Economics is a social science that studies the production, distribution, and consumption of goods and services".

Types:

There are two basic types of economics:

1. **Microeconomics:** Microeconomics studies the decisions of individuals and firms to allocate resources of production, exchange, and consumption. Microeconomics deals with prices and production in single markets and the interaction between different markets.
2. **Macroeconomics:** Macroeconomics focuses on the performance of economies – changes in economic output, inflation, interest and foreign exchange rates, and the balance of payments.

Schools of Thoughts:

1. **Classical School of Thought:** This school of thought was given by Adam Smith, also known as "father of economics", in 1776. The main idea of the Classical school was that markets work best when they are left alone, and that there is nothing but the smallest role for government. This approach has a strong belief in the efficiency of free markets to generate economic development. Markets should be left to work because the price mechanism acts as a powerful 'invisible hand' to allocate resources to where they are best employed. In terms of explaining value, the focus of classical thinking was that it was determined mainly by scarcity and costs of production. This school of thought was then countered by Neo-Classical school of thought.
2. **Neo-Classical School of Thought:** This theory was given by Alfred Marshal in 1890. He also wrote a book named "the principles of

economics" which further described his thought. He said that economics is a science in which we study materialistic welfare. He was criticized for saying so because it talked about materialistic welfare which isn't as important as the main point of economics that is "satisfaction". Another point for criticism was that he totally ignored non-materialistic welfare.

3. **Modern School of Thought:** This theory is given by Lionel Robbins in 1932. He wrote a book named "An Essay on the Nature and Significance of Economics". This theory is one still used today. He gave the definition that "economics is a science in which we study the relationship between wants and scarce resources which have alternative uses". It is the basic definition of economics. "Needs" can be fulfilled but "wants" are never fulfilled so that's why he discusses unlimited wants which is human nature.

Three Basic Problems/Questions of Economics:

1. **What to produce?** This question addresses the allocation of resources among different goods and services. For instance, a smartphone manufacturer might decide to allocate resources towards producing either a new model with enhanced features or a budget-friendly version to cater to different consumer preferences.
2. **How to produce?** This question focuses on the choice of production methods and techniques. An automobile manufacturer might decide whether to use traditional assembly line methods or invest in robotics and automation to streamline production and reduce costs.
3. **For whom to produce?** This question considers the distribution of goods and services among consumers. A bakery might decide whether to offer discounts or promotions to attract budget-conscious customers or focus on premium products for customers willing to pay a higher price for quality.

Scarcity:

Scarcity refers to the fundamental economic problem of limited resources relative to unlimited wants and needs. In other words, there are not enough resources available to produce all the goods and services that individuals desire. It is a universal concept. Scarcity can change with respect to time and place. Scarcity can make us or force us to make certain choices. Scarcity can also result in competition & conflict.

Consumer Behavior:

The behavior of the people with regard to selection, purchase and consumption of goods & services for satisfaction of their wants is known as consumer behavior.

According to modern economics, there are some definite principles that a consumer follows. He doesn't roam about the market and buy whatever's available at any price. Before going to the market, he takes many points into consideration. Like, what commodity/good he would like to consume. For this, he compares the satisfaction/utility he expects from each commodity according to his taste. Since he knows he can't get everything he wants, he arranges the desired commodities in the order of the preference. Then, he looks at the amount of money he has with hi, that he can spend. We all know that it is a universal fact that money can never be enough to buy everyone one desires. Last but not the least, he looks at the price of commodities/goods available in the market and when he realizes he can't buy everything he wants, he shortens the list by selecting only those goods that promise greater utility. Every consumer that always try to get the maximum satisfaction with the less amount of budget he has and such a consumer is called a **rational consumer**.

Utility:

Goods are demanded because they have utility. We can define it as "Utility is the satisfaction that a person gets from consumption of a good or service".

Features/Characteristics of Utility:

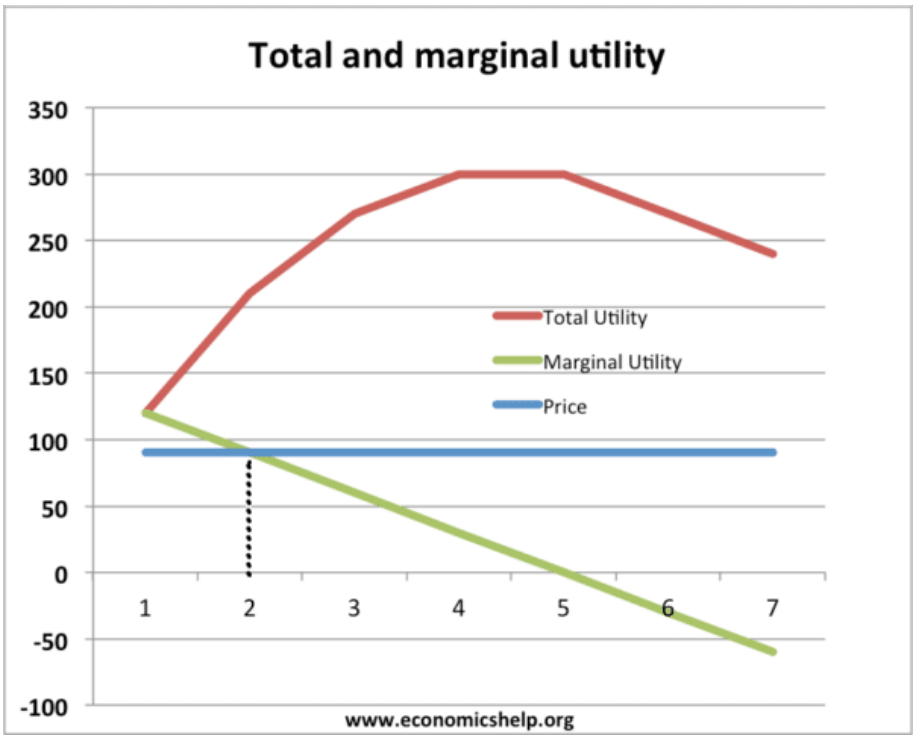
1. **Relative Term:** Utility is a relative term because it varies from person to person and situation to situation. What one individual finds useful or valuable may not be the same for another person.
2. **Depends upon Intensity of Wants:** The greater one person wants something, the greater utility/satisfaction he will receive from it.

   $$\text{Utility} \propto \text{Intensity of Wants}$$
3. **Subjective:** Utility is subjective as we can't exactly measure how much utility a person receives when his want is fulfilled.
4. **Different from Usefulness:** Utility is fullness of wants (wants can be good or bad). It isn't guaranteed that utility will always prove to be useful.
5. **Basis of Demand:** Utility is based on demand as if a person demands, only then there can be utility.

Kinds of Utility:

1. **Total Utility:** Total utility is the total amount of satisfaction a person derives from consume some good.
2. **Marginal Utility:** Marginal utility is the change in utility due to consumption of one more unit of a good.

Quantity (Q)	Total Utility	Marginal Utility
1	120	120
2	210	90
3	270	60
4	300	30
5	300	0
6	270	-30
7	240	-60



In the above example, total utility (300) is maximized after just four pieces of chocolate cake.

The fifth piece of chocolate cake gives zero marginal utility, so we are indifferent between 4 pieces and five pieces.

However, if we eat the sixth piece of chocolate cake, we start to feel ill – and so we get negative utility

3. **Zero Utility:** Zero utility means that the consumer has no further desire for the commodity.
4. **Negative Utility:** Negative utility is when desired are finished and you consume extra utilities that you end up getting unsatisfied.

Approaches of Utility:

Cardinal Approach:

This approach was given by Alfred Marshal in 1890. This approach says that utility can be measured in numbers. There are two laws in cardinal approach:

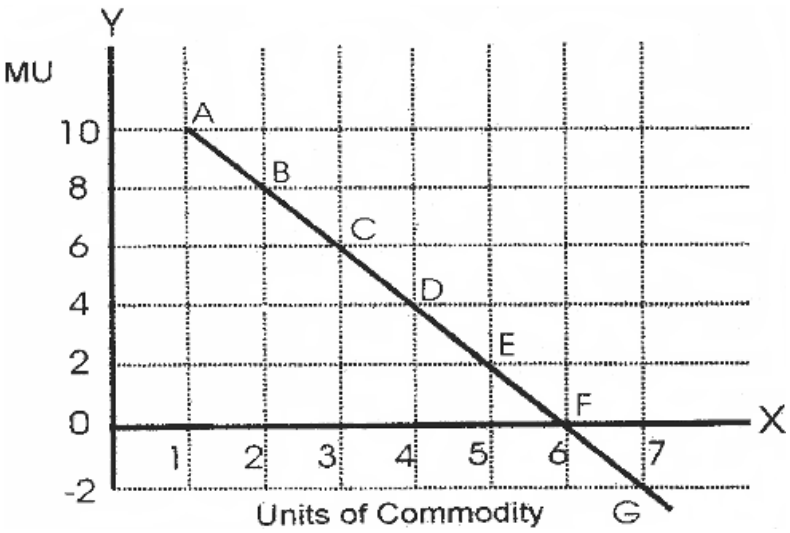
1. **Law of Diminishing Marginal Utility:** The law of diminishing marginal utility states that all else equal, as consumption increasing, the marginal utility derived from each additional utility decreases. There is a Latin phrase "Ceteris Paribus" meaning that we are considering the additional satisfaction from consuming more of a good while assuming all other factors remain unchanged.

   Assumptions:

   - Commodity should be homogeneous in quality & quantity.
   - Taste & liking of the consumer remains the same.
   - Income of the user remains unchanged.
   - Consumption should be in normal units.
   - Consumption should be continuous.

   Table & Graph:

Units of commodity	Marginal utility	Total utility
1st glass	10	10
2nd glass	8	18
3rd glass	6	24
4th glass	4	28
5th glass	2	30
6th glass	0	30
7th glass	-2	28

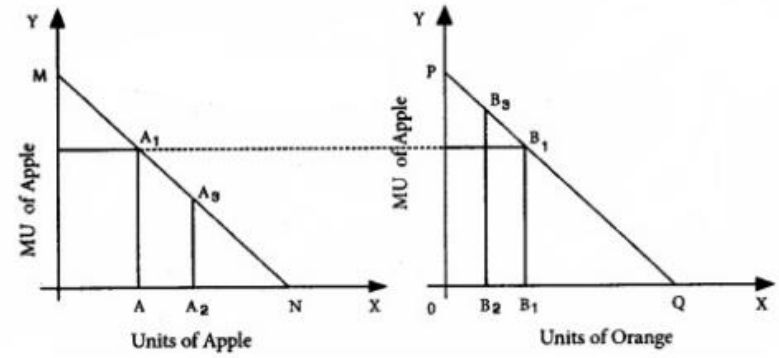


We assume that a man is very thirsty. On taking the 1st glass of water, the consumer gets 10 units of utility, because he is very thirsty. When he takes 2nd glass of water, his marginal utility goes down to 8 units because his thirst has been partly satisfied. This process continues until the marginal utility drops down to zero which is the saturation point. By taking the seventh glass of water, the marginal utility becomes negative because the thirst of the consumer has already been fully satisfied.

2. **Law of Equi-Marginal Utility:** Total utility from a given amount is maximum when it is spent of various goods in such a way that marginal utility of money spent on each good becomes equal.
   Assumptions:
   - Consumer has a fixed amount to spend.
   - Only two goods are bought by the consumer.
   - Price of the two goods/commodities must be the same.
   - Goods/commodities must be heterogeneous.

The law of the Equi-marginal utility

Units of commodities	Apple		Orange	
	Total Utility	Marginal Utility	Total Utility	Marginal Utility
1	25	25	30	30
2	45	20	41	11
3	63	18	49	8
4	78	15	54	5
5	88	10	58	4
6	92	4	61	3



Let us assume that the consumer has a given income of Rs. 11. He wants to spend this entire income (i.e. Rs. 11) on apples and oranges. The price of an apple and the price of an orange is Rs. 1 each.
If the consumer wants to attain maximum utility, he should buy 6 units of apples and 5 units of oranges (6+5=11 i.e. his income), so that she can get 92 + 58 = 150 units. No other combination of apples and oranges can give higher than 150 utilities.

Ordinal Approach:

This approach was given by John Hicks in 1930. It is also known as indifference curve/consumer theory. It says that we can arrange the utilities in the order of preferences as we can't measure it quantitatively.

Indifference Curve: Indifference curve shows all the combinations of two commodities. They have equal satisfaction for the consumer.

Table & Graph

Here is an example to understand the indifference curve better. Peter has 1 unit of food and 12 units of clothing. Now, we ask Peter how many units of

clothing is he willing to give up in exchange for an additional unit of food so that his level of satisfaction remains unchanged.

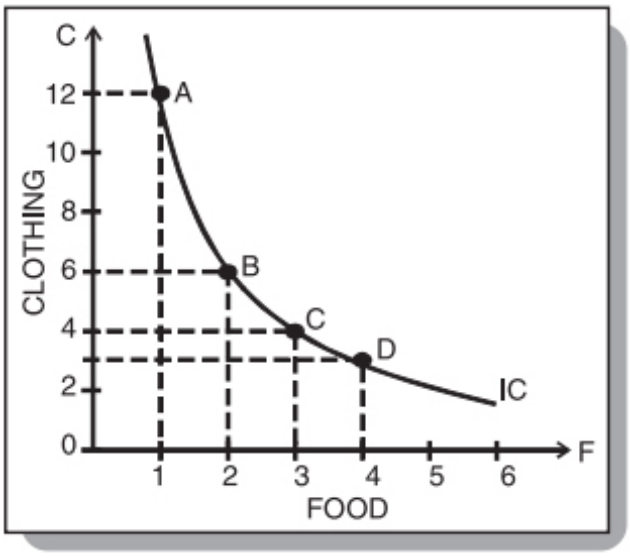
Peter agrees to give up 6 units of clothing for an additional unit of food. Hence, we have two combinations of food and clothing giving equal satisfaction to Peter as follows:

1 unit of food and 12 units of clothing

2 units of food and 6 units of clothing

By asking him similar questions, we get various combinations as follows:

Combination	Food	Clothing
A	1	12
B	2	6
C	3	4
D	4	3



Assumptions:

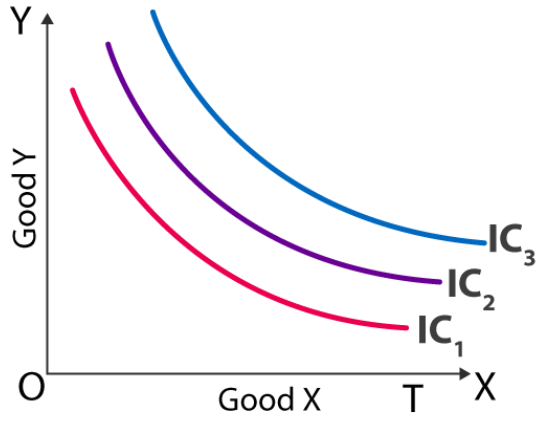
- Consumer is rational and aims to maximize utility.
- As a normal human being, he prefers more quality of a good to less.
- Consumer can tell which combinations of goods he prefer and among which he is not interested in.

Properties:

- The curve slopes downward (negative slope).
- The curve is convex to the origin.
- The indifference curves never intersect each other.

Indifference Map:

The indifference map refers to a set of indifference curves that reflect an understanding & gives an entire view of a consumer's choice. The below diagram shows an indifference map with 3 indifference curves.



Indifference Map

Properties: (same as Indifference Curve)

- The curve slopes downward (negative slope).
- The curve is convex to the origin.
- The indifference curves never intersect each other.

- Higher IC represents higher level of satisfaction.

Budget Line/Constraint:

A budget line shows are those combinations of two goods (x and y) which a consumer can buy at any given prices of goods, using up all incomes he wants to spend.
To draw a budget line, we need two kinds of information:

- Income to be spent on x and y goods
- Prices of x and y

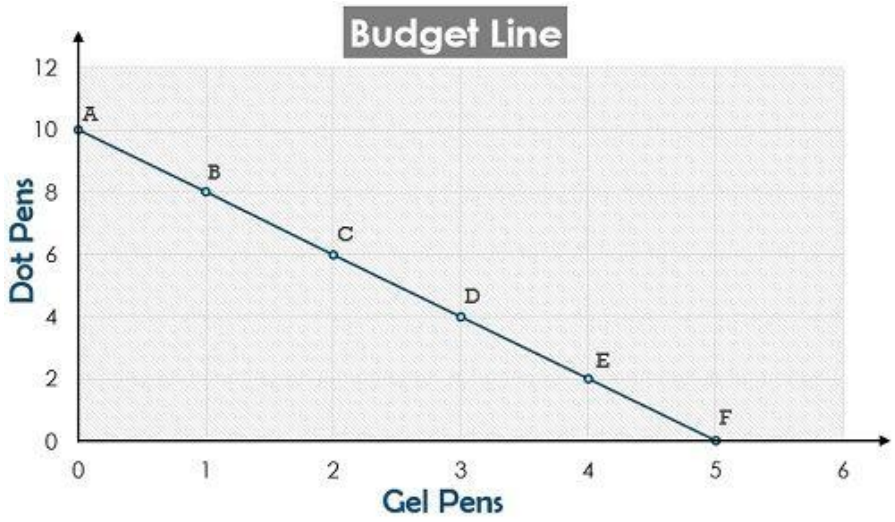
Table & Graph:

Let us say that a person has 50/- for buying pens. He/She has the following options for allocating his/her amount such that he/she derives the maximum utility from limited income:

Budget Schedule

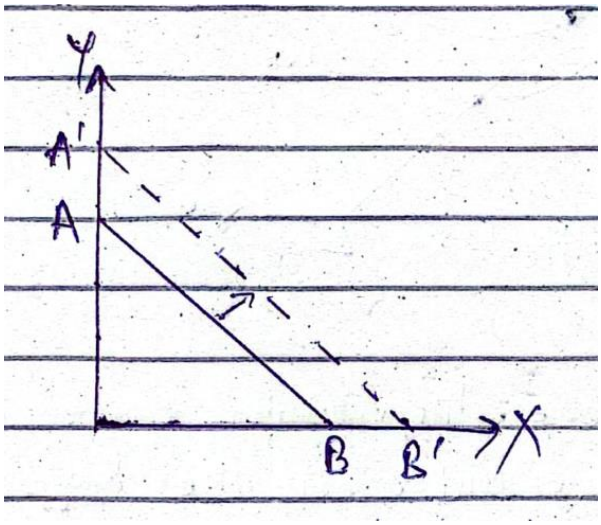
Combination	Gel Pens (@ 10/- Per Pen)	Dot Pens (@ 5/- Per Pen)	Budget Allocation
A	0	10	10*0+ 5*10 = 50
B	1	8	10*1+ 5*8 = 50
C	2	6	10*2+ 5*6 = 50
D	3	4	10*3+ 5*4 = 50
E	4	2	10*4+ 5*2 = 50
F	5	0	10*5+ 5*0 = 50

The above Budget schedule can be plotted on a graph to obtain the appropriate budget line for this instance;

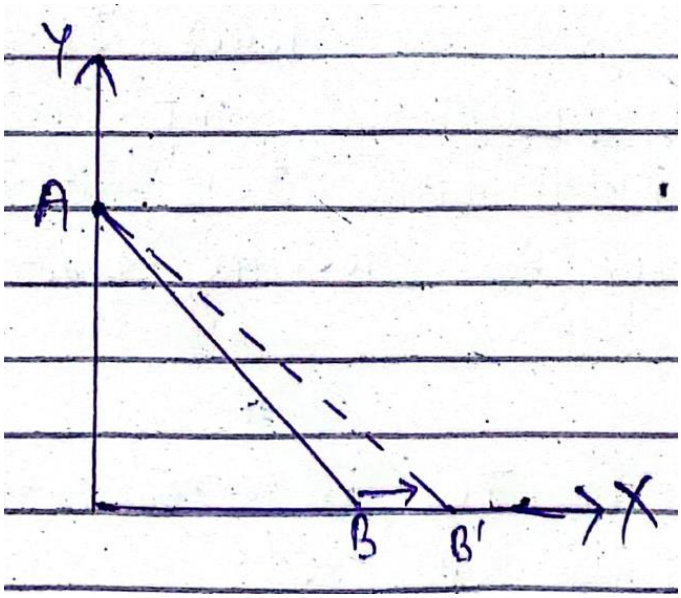


Shift in Budget Line: There is a shift in the budget line when there is a change in the income of the consumer or when there is a change in the prices of either one or both commodities.

1. **Effect of a Change in the Income:** When income increases, consumer can afford more of the two commodities. So, budget line shifts to the right. In case income falls, budget line will shift leftwards.

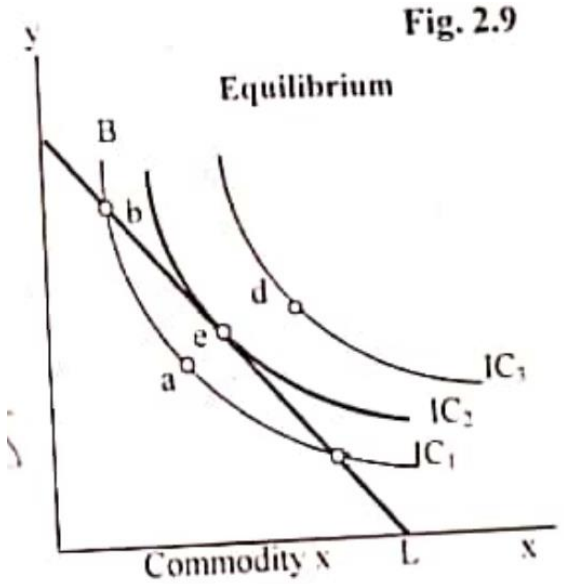


2. **Effect of Change in the Price:** When prices changed, the budget line changes its slope. E.g., when price of x falls, the consumer can buy more of x so budget line movies right on x-axis.



Consumer Equilibrium:

When a consumer has chosen a combination of commodities which has he thinks has the highest satisfaction, he is said to be in the equilibrium.

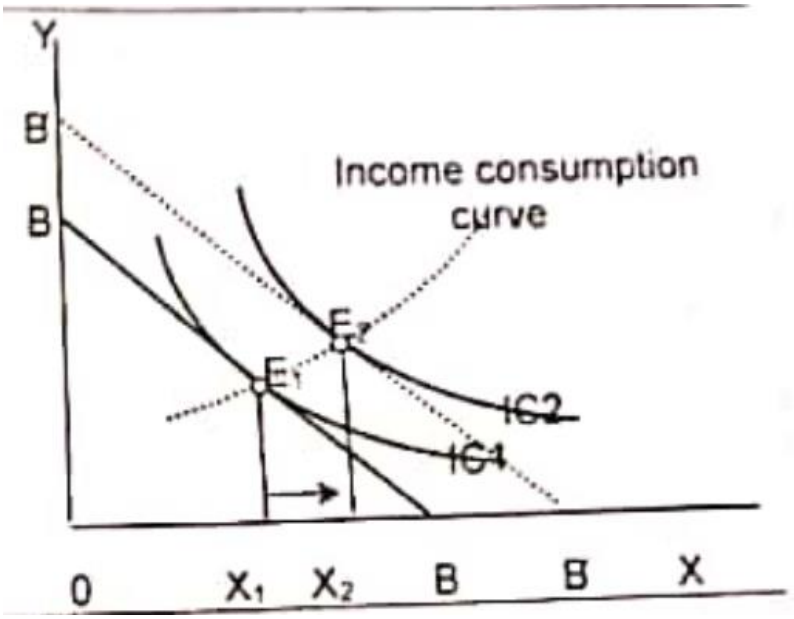


Consider the figure above. The consumer can buy any combination like b, e and c. But point e is the best compared to other points because it gives maximum satisfaction. Here IC_2 is tangent to BL. If he chooses combination a, he is not using up the entire amount and he is at lower IC_1 having a lower satisfaction. Similarly, b or c points lie on lower IC. So, point e is the equilibrium point. The consumer would like to reach higher IC_2 but he does not have enough money for this. Thus, he cannot go outside BL.

The point where an IC is tangent to budget line is the equilibrium point.

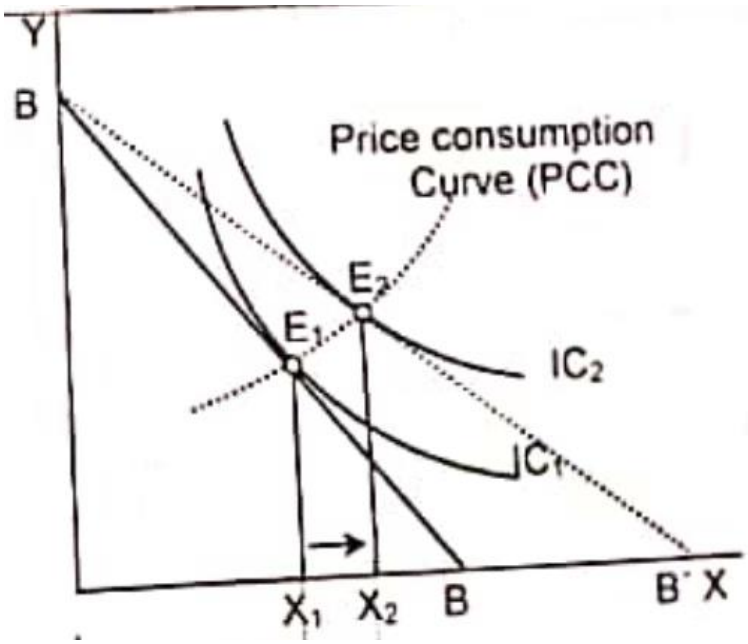
Income Consumption Curve (ICC):

The Income Consumption Curve (ICC) illustrates how changes in income affect consumption choices while keeping prices constant. It typically slopes upwards, indicating that as income rises, consumption also increases. Look at the figure below. Initially, the budget line was BB. The consumer was in equilibrium at point E. Later when the income rises, the consumer gets more purchasing power to buy X and Y so the budget line shifts to the right i.e. B'B'. New equilibrium is at E_2. We see that increase in income has caused increase in consumption equal to $X_1 X_2$ quantity.



Price Consumption Curve (PCC):

The Price Consumption Curve (PCC) showcases how changes in the price of one good influence the consumption of another, assuming income remains constant. It usually slopes downwards, indicating the substitution effect between goods as their relative prices change. For example in the diagram below, budget line BB is drawn with the assumption that price of X commodity is P_1. The consumer's equilibrium point is at point E. He buys X_1 of price X. Now price of X commodity falls to P_2. With the same income, the consumer has moved to point E_2 buying more of X. He has been able to go higher indifference curve. His satisfaction level has increased.

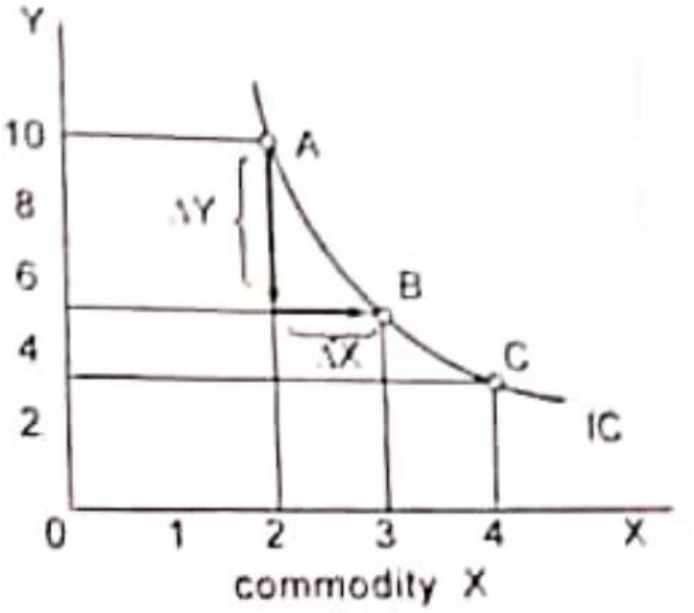


Marginal Rate of Substitution (MRS):

The rate at which a consumer is willing to substitute commodity X for Y is called marginal rate of substitution (MRS). We can write it as:

$$\text{MRS} = \frac{Change\ in\ X}{Change\ in\ Y} = \frac{\Delta X}{\Delta Y}$$

As the consumer chooses more and more amount of X, he gives less and less of Y in exchange. The reason for such behavior is that when a consumer increases X, its marginal utility decreases. On the other hand, as he gives up Y, it marginal utility increases. So the rate of giving up Y falls. This is called Principle of Diminishing Rate of Substitution (DMRS).



Demand: