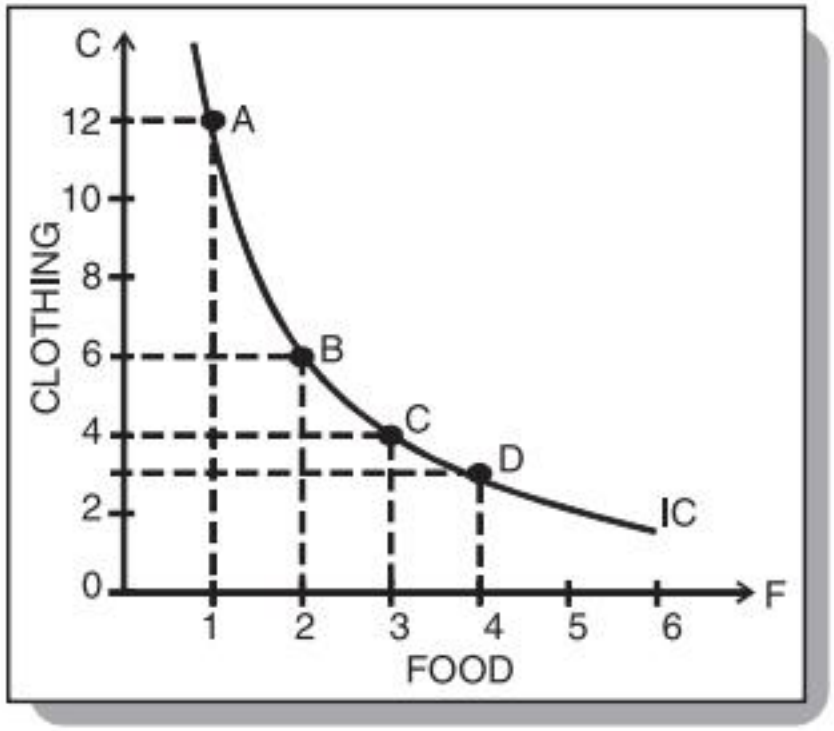
INDIFFERENCE CURVE ANALYSIS

Indifference curve is the locus of points which represent combination of two commodities M and N which yields equal satisfaction to the consumer.

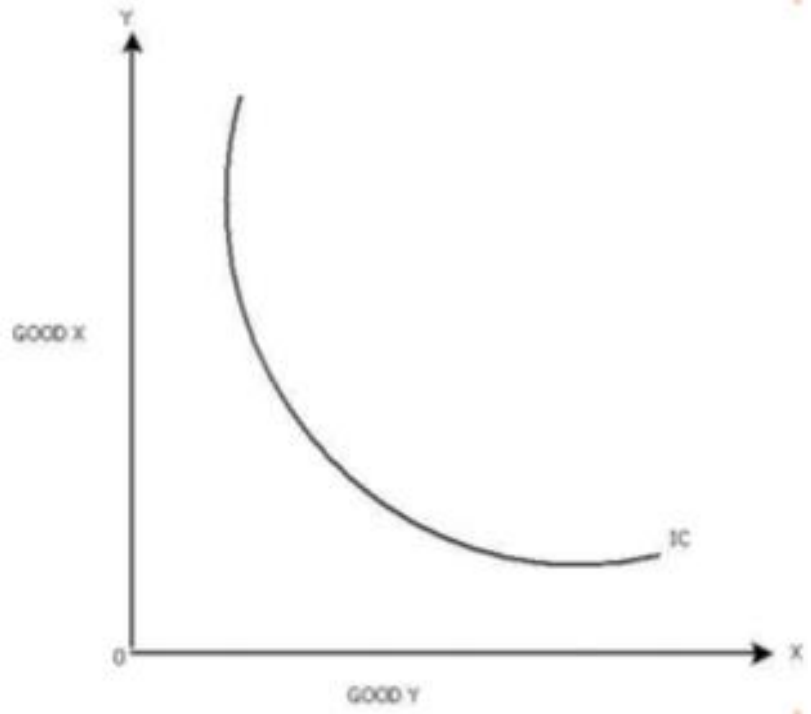


Characteristics of Indifference Curve

❖ Indifference Curves are negatively sloped.

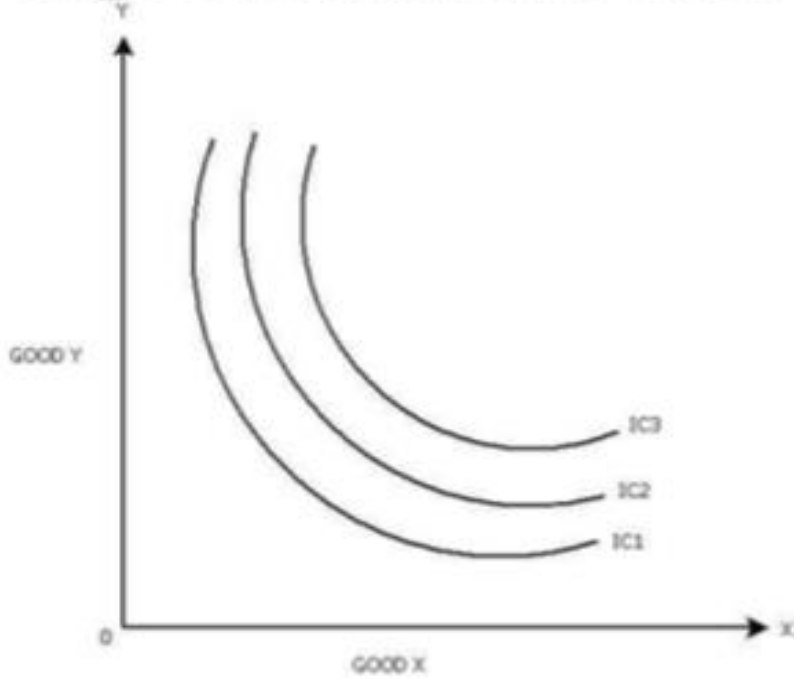
The indifference curves must slope downward **from left to right**

As the consumer increases the consumption of X commodity, he has to give up certain units of Y commodity in order to maintain the **same level of satisfaction**.



❖ Higher Indifference Curve represents higher level of satisfaction

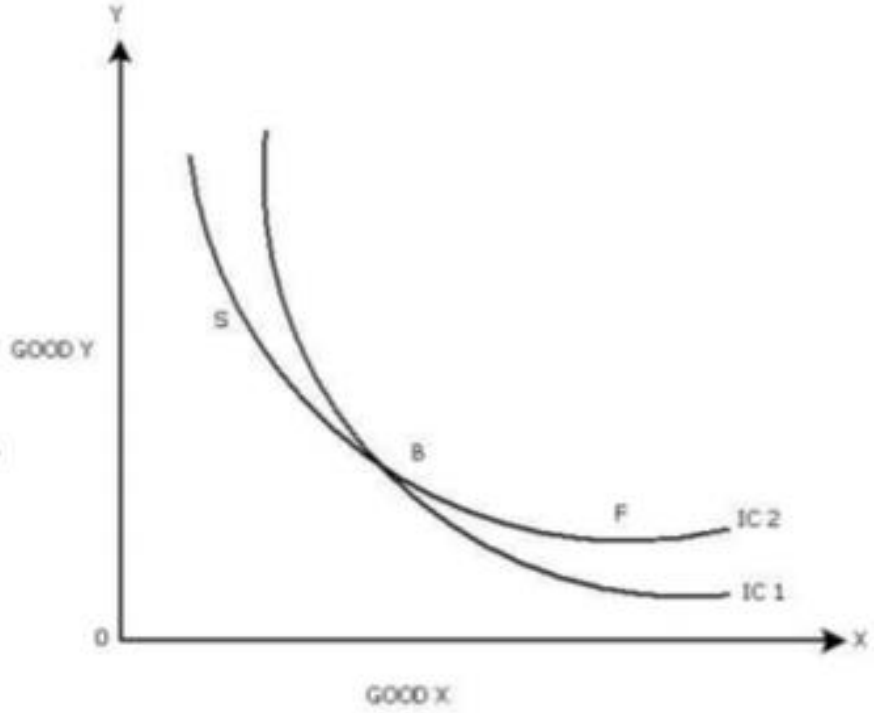
Indifference curve that lies above and to the right of another indifference curve represents a higher level of satisfaction. The combination of goods which lies on a higher indifference curve will be preferred by a consumer to the combination which lies on a lower indifference curve.



❖ Indifference curves cannot intersect each other

The indifference curves **cannot intersect each other**. It is because at the point of tangency , the higher curve will give as much as of the two commodities as is given by the lower indifference curve.

Intersection is impossible.

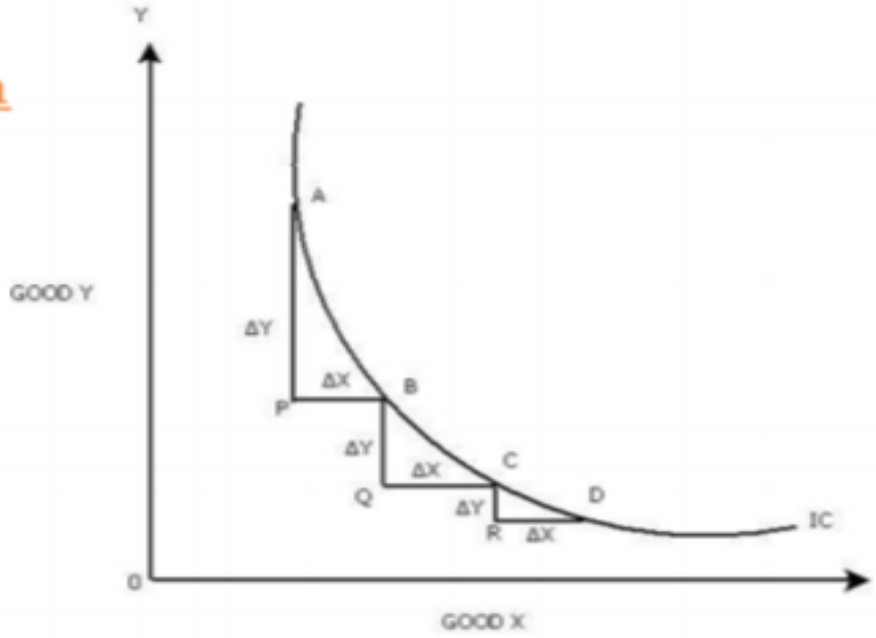


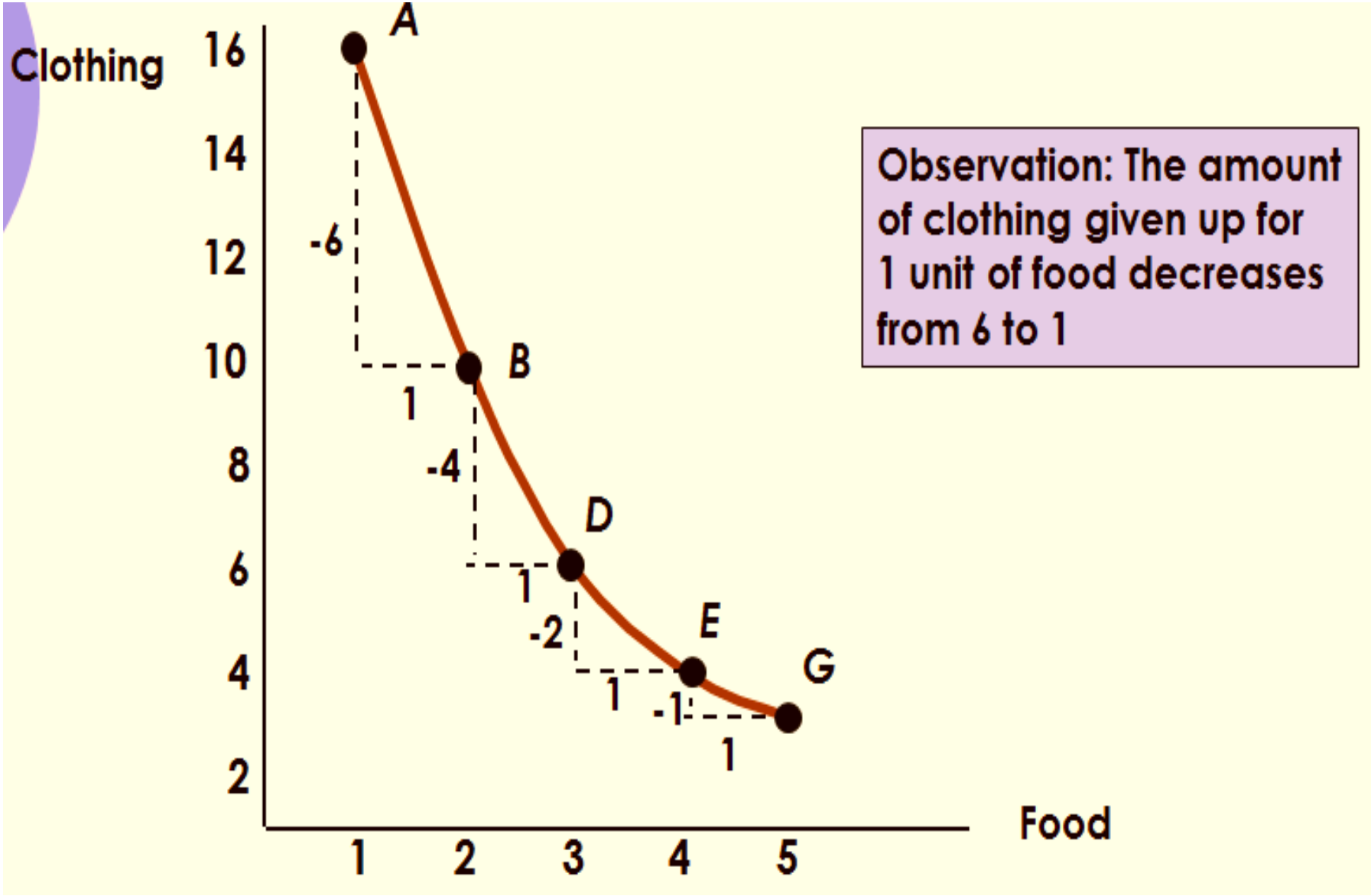
❖ Indifference Curves are convex to the origin

This is an important property of indifference curves. They are **convex to the origin**. As the consumer substitutes commodity X for commodity Y, the marginal rate of substitution diminishes as X for Y along an indifference curve.

The Slope of the curve is referred as the Margin Rate of Substitution.

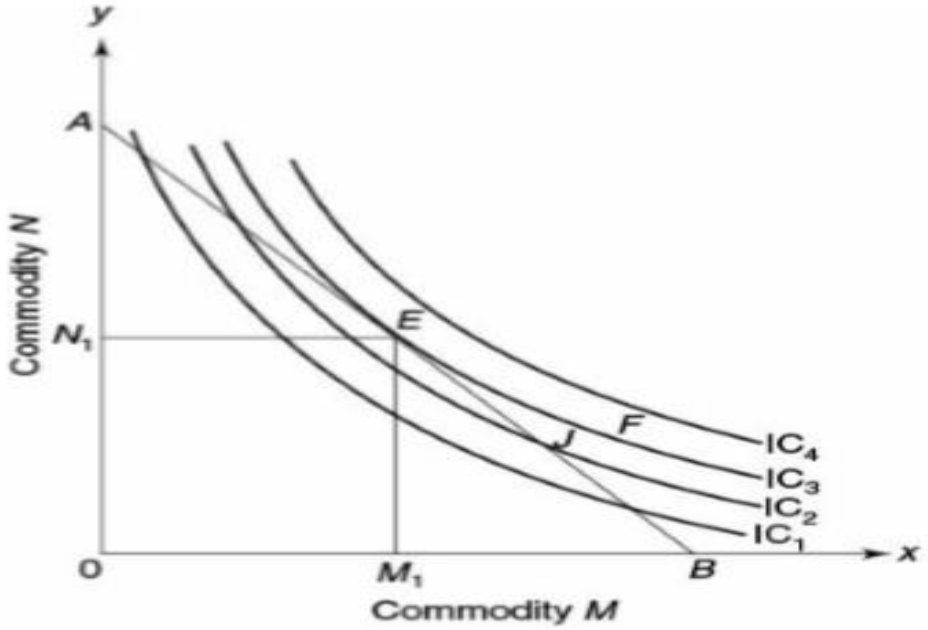
The Marginal Rate of Substitution is the rate at which the consumer must sacrifice units of one commodity to obtain one more unit of another commodity.




Clothing
16
14
12
10
8
6
4
2
A
B
D
E
G
-6
1
-4
1
-2
1
-1
1
1
2
3
4
5
Food
Observation: The amount of clothing given up for 1 unit of food decreases from 6 to 1

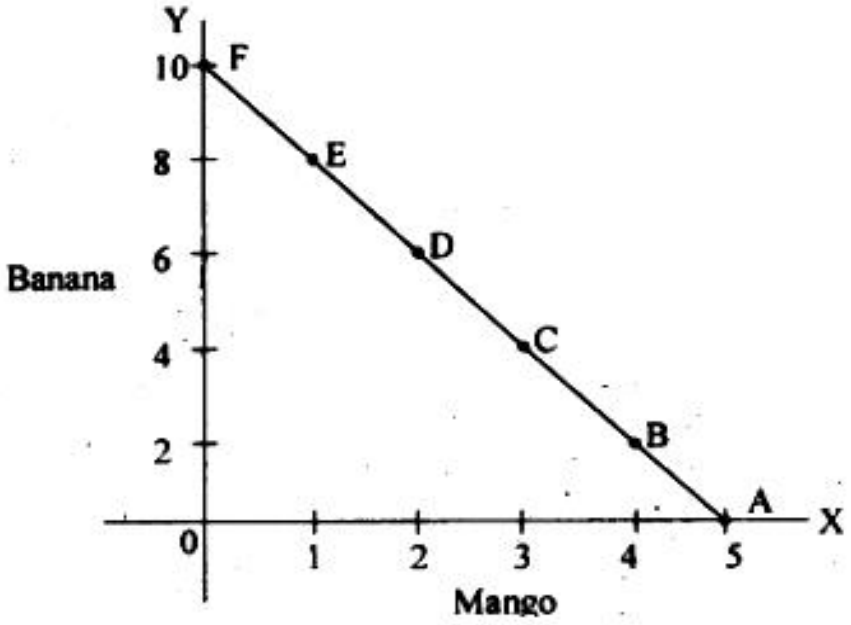
- The marginal rate of substitution of M for N (MRS_{MN}) refers to the amount of N that a consumer is willing to forego in order to gain one additional unit of M (and still remain on the same curve which means same level of satisfaction). On moving down on indifference curve, the MRS_{MN} diminishes. In Fig. MRS_{MN} is more at the point E than at the point F.

$$MRS_{MN} = -\frac{MU_M}{MU_N}$$

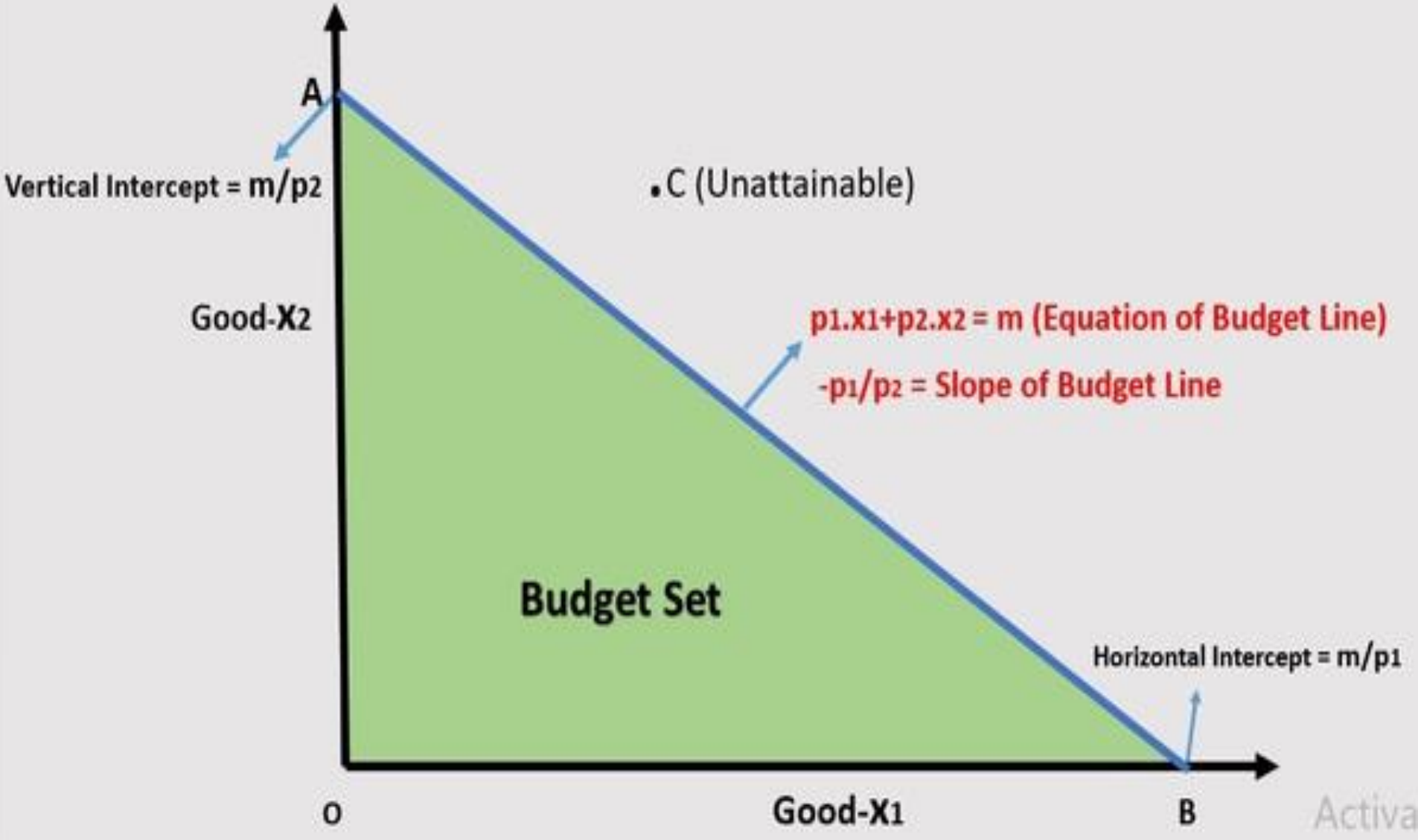


Budget Constraint Line: The budget constraint line shows the different combinations of the commodities that a consumer can purchase, given his money income and prices of the commodities.

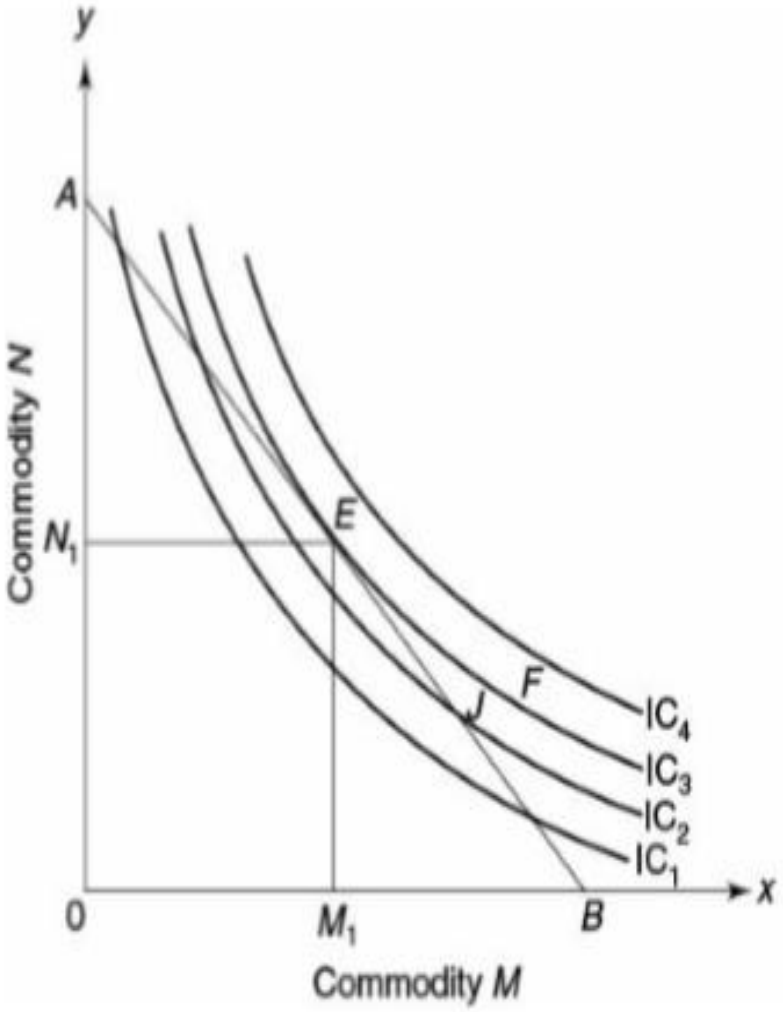
Combinations of Mango and Banana	Quantity of Mango (@ Rs.8 each)	Quantity of Banana (@ Rs.4 each)	Money income spent
A	5	0	(5 × 8) +(0 × 4) = 40
B	4	2	(4 × 8) + (2 × 4) = 40
C	3	4	(3 × 8) + (4 × 4) = 40
D	2	6	(2 × 8) + (6 × 4) = 40
E	1	8	(1 × 8) + (8 × 4) = 40
F	0	10	(0 × 8) + (10 × 4) = 40



Budget Line


A
Vertical Intercept = m/p2
C (Unattainable)
Good-X2
p1.x1+p2.x2 = m (Equation of Budget Line)
-p1/p2 = Slope of Budget Line
Budget Set
Horizontal Intercept = m/p1
O
Good-X1
B

Consumer Equilibrium: A consumer is in equilibrium when his budget line reaches the highest possible curve.



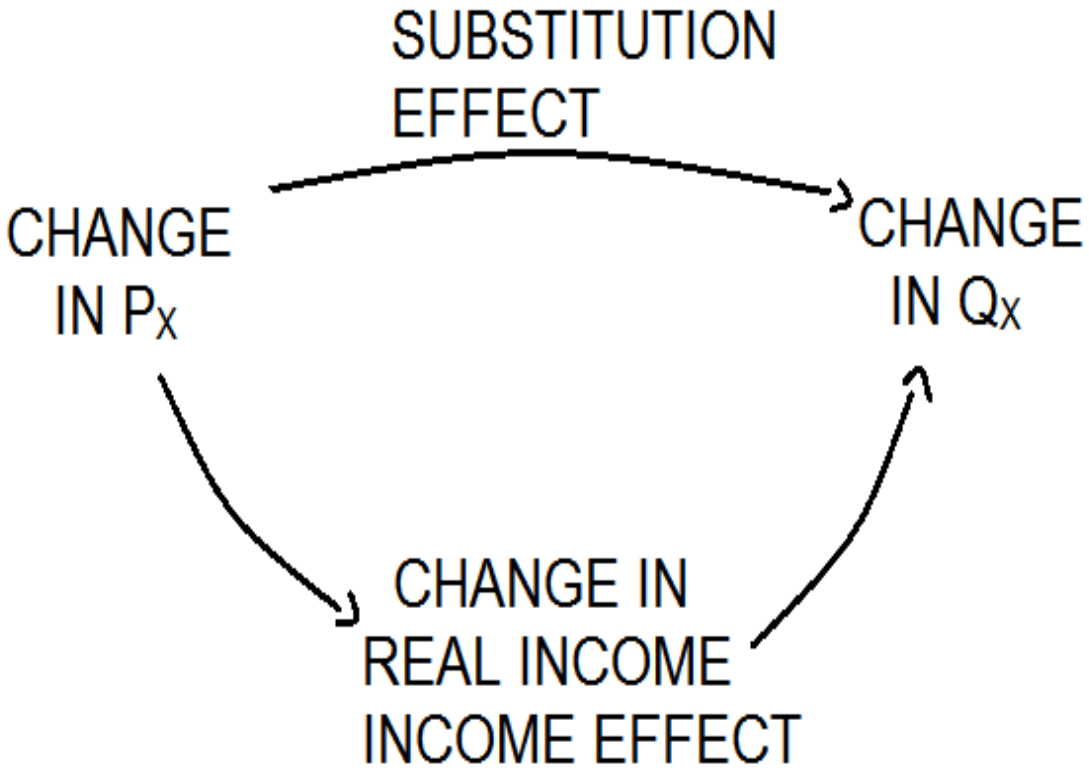
All the combinations of two commodities at IC4 are beyond the buying capacity of the consumer.

On the other hand, IC1 and IC2, which cut the budget line at two places are attainable but none of them gives highest level of satisfaction which the consumer can attain.

The consumer equilibrium is achieved at the point E of IC3 as it is tangent to the budget line AB.

Consumer's Equilibrium through Indifference Curve: According to indifference curve approach, a consumer attains equilibrium under two conditions:

1. When marginal rate of substitution is equal to ratio of prices of two goods i.e., $MRS_{xy} = P_x/P_y$.
2. MRS_{xy} is continuously falling i.e., indifference curve should be convex to the origin.

PRICE EFFECT

Two ways in which a price change affects quantity demanded