Indifference curve theory

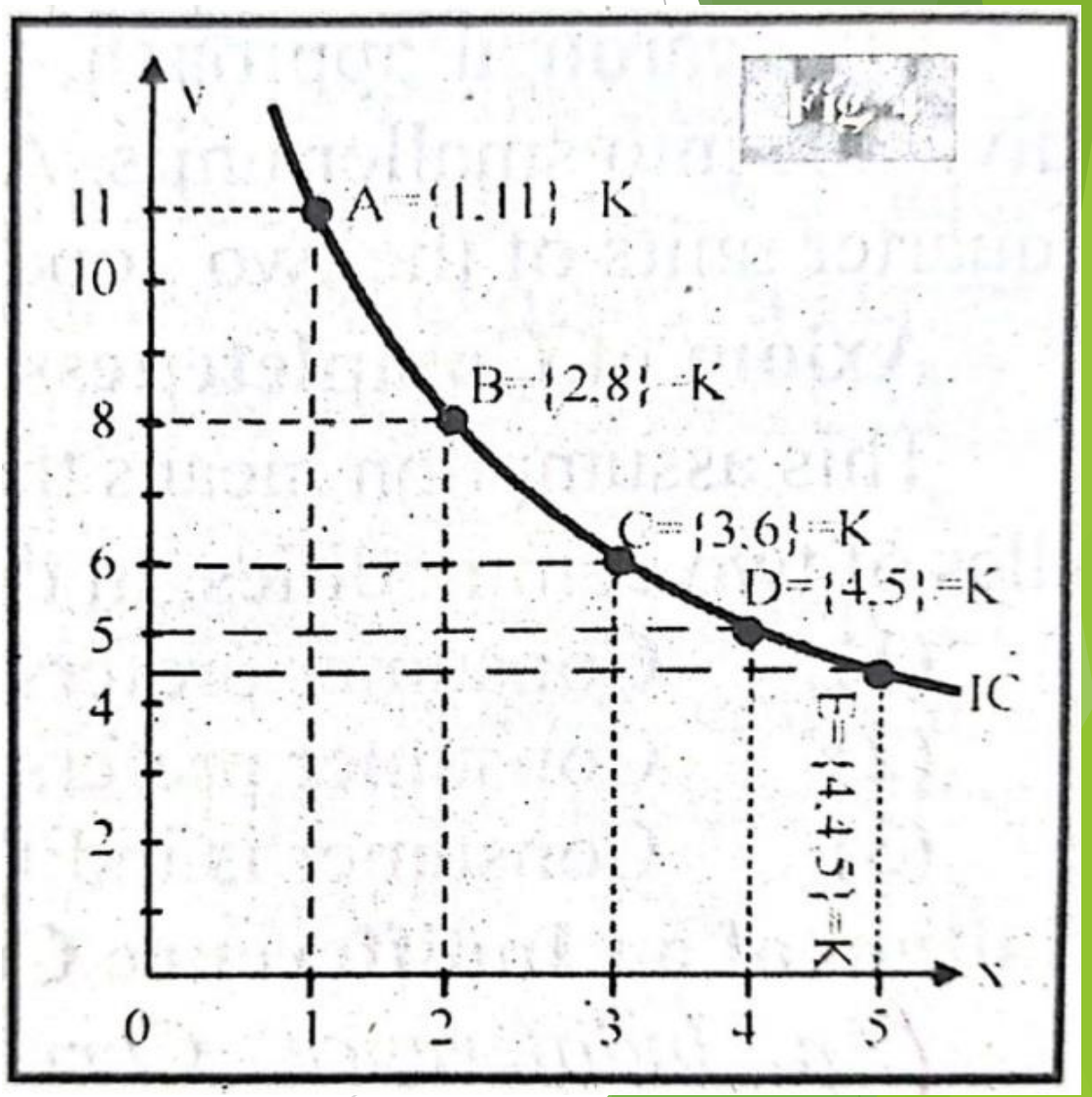
Indifference curve

Definition

"An indifference curve is a curve which shows different combinations of two commodities like X and Y which give a consumer an equal level of satisfaction"

Table and diagram

Bundle	X	Y	MRS=$\frac{\Delta Y}{\Delta X}$	Satisfaction
A	1	11		K
B	2	8	3	K
C	3	6	2	K
D	4	5	1	K
E	5	$4\frac{1}{2}$	$\frac{1}{2}$	K



Marginal Rate of Substitution MRS

The rate of exchange between two commodities x and y is called MRS.

It means how many units of commodity y the consumer has to forego to get an additional unit of commodity x while the new combination of commodity x and y yields the same level of satisfaction.

MRS = Slope of IC = $\frac{Perpendicular}{Base} = \frac{\Delta Y}{\Delta X} = \frac{3}{1} = 3$

Principle of Diminishing Rate of Substitution PDMRS

If we observe IC schedule and table MRS goes on to fall.

$MRS_{(A-B)} = 3$

$MRS_{(B-C)} = 2$

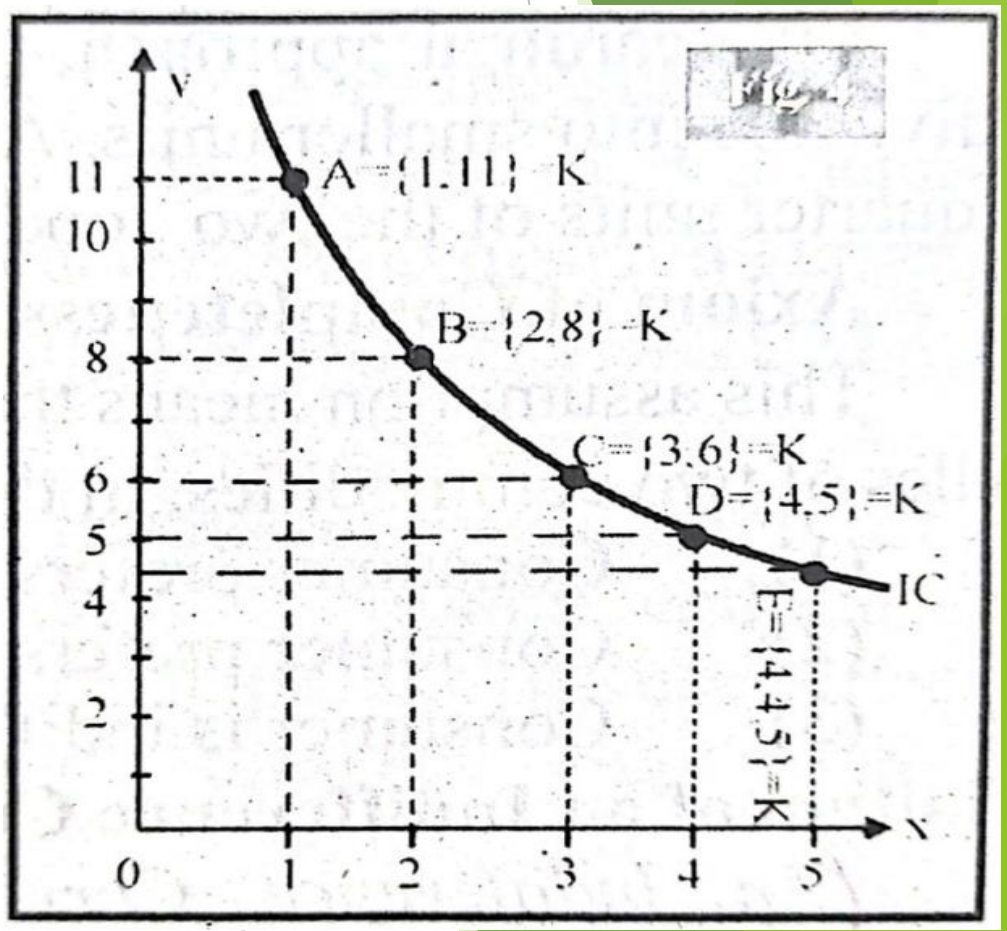
$MRS_{(C-D)} = 1$

$MRS_{(D-E)} = \frac{1}{2}$

IC is convex to origin due to falling of MRS

Why MRS falls???

As a consumer has more and more of any commodity his desire to get any more of it decreases.



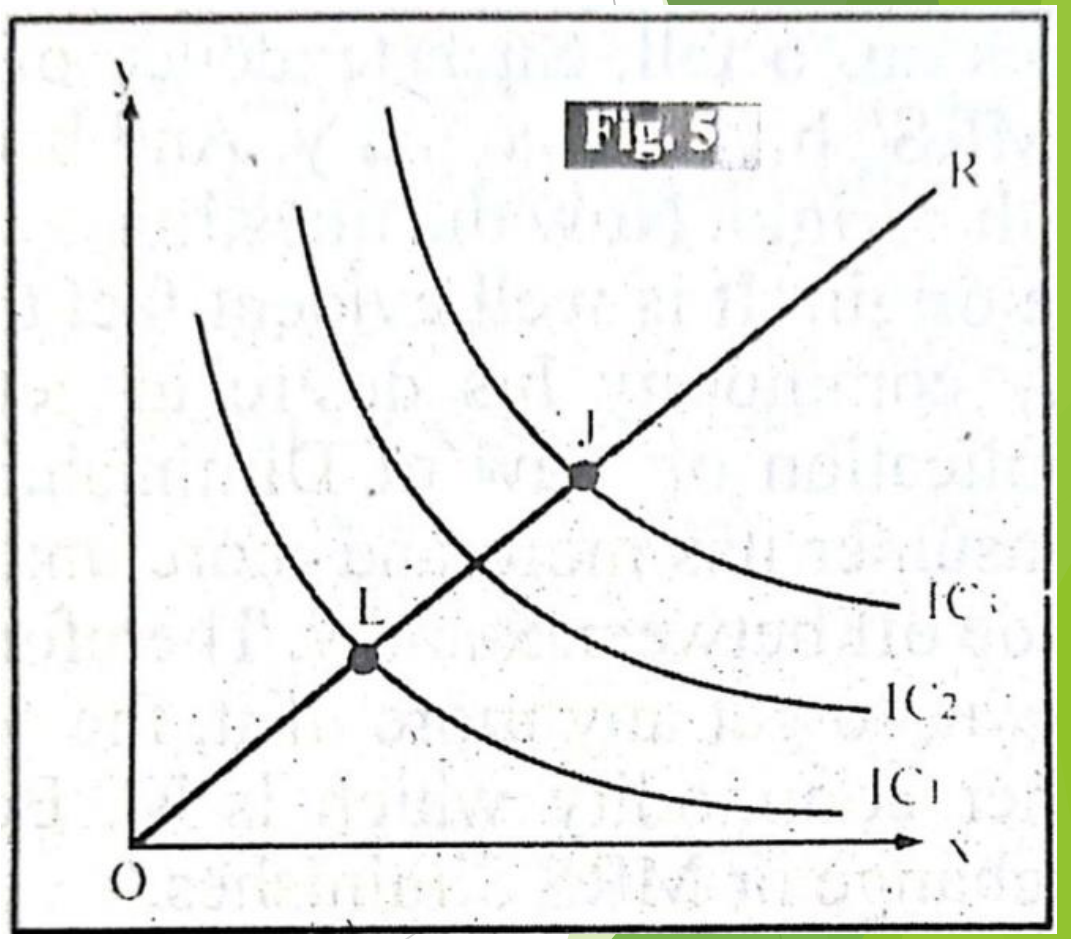
Indifference Curve Map

This figure shows an IC map

A lower IC shows lower utility because it reflects smaller quantities of x and y

A higher IC shows higher utility because it reflects larger quantities of x and y

Consumer will desire to reach a highest possible IC



Budget line

Definition

Budget line is a curve which shows different combinations of two goods like x and y which a consumer can purchase, while the consumer's income and prices of x and y are given

budget equation xPx + yPy = I

Suppose

Consumer's income = I = 10

Price of x = Px = 2

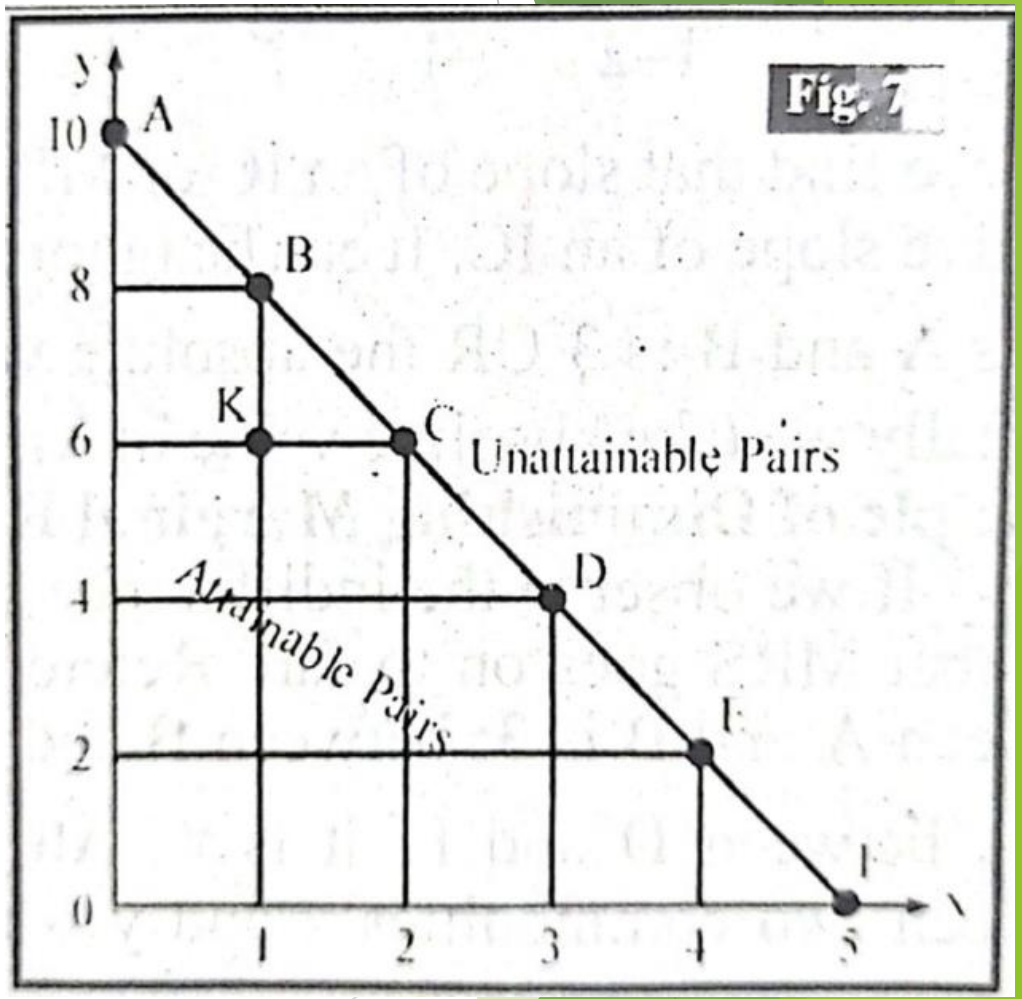
Price of y = Py = 1

2x + y = 10

Pairs	X	Y	2x+y = 10
A	0	10	2(0)+10 = 10
B	1	8	2(1)+ 8 = 10
C	2	6	2(2)+ 6 = 10
D	3	4	2(3)+ 4 = 10
E	4	2	2(4)+ 2 = 10
F	5	0	2(5)+ 0 = 10

Properties

1. Combinations outside the budget line are unattainable pairs
2. Pairs inside the budget line are attainable but full income in not spent
3. Pairs on the line consumes exactly full income



Consumer's Equilibrium

Definition

Consumer is in equilibrium when the budget line is tangent to the highest possible indifference curve.

Conditions of equilibrium

Necessary condition

IC is tangent to Budget line

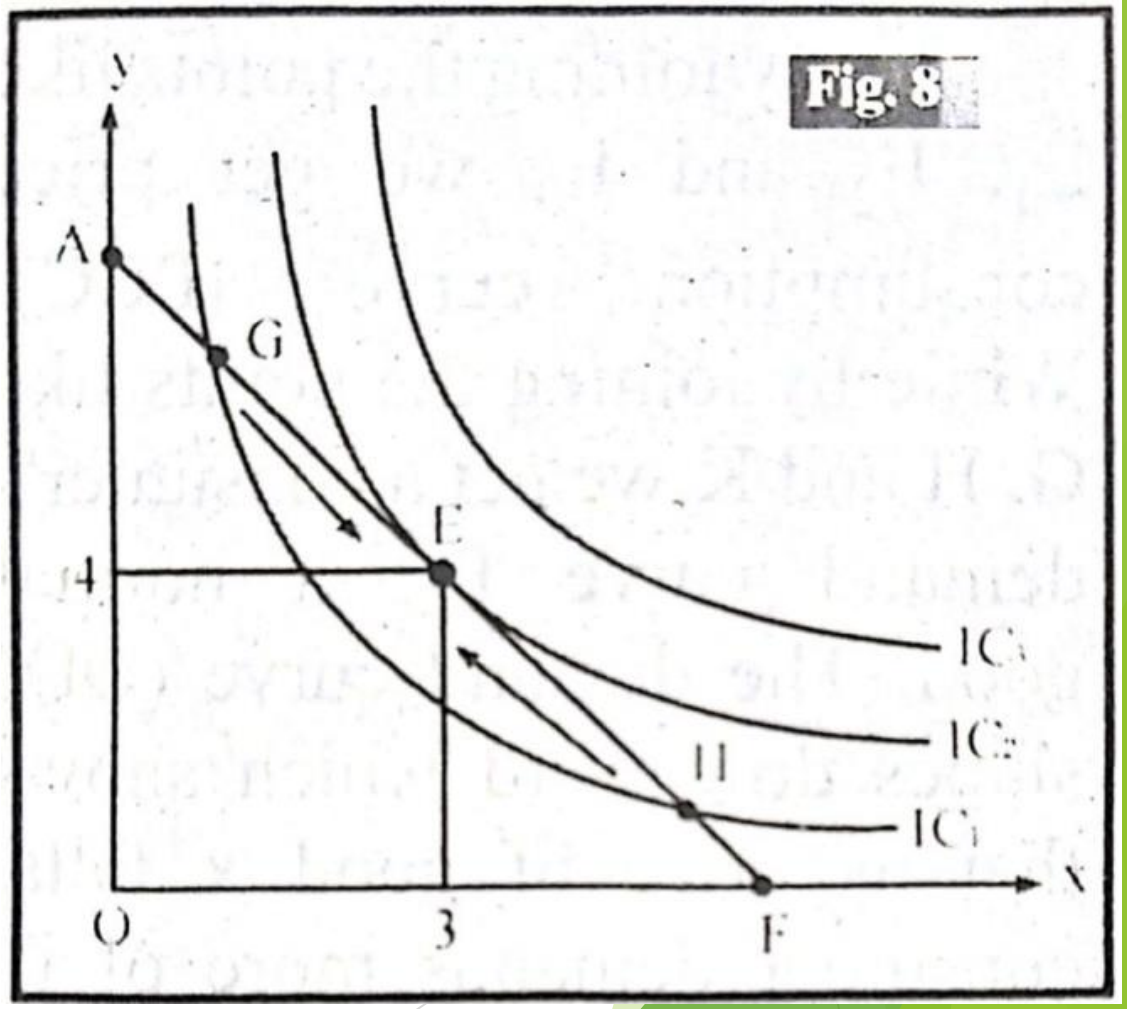
Slope of IC = Slope of Budget line

$$MRS = \frac{P_x}{P_Y}$$

Sufficient condition

IC is convex to origin at the above point

Consumer is in equilibrium at E and he will consume 3 units of x and 4 units of y.



Assumption

1. Consumer is rational
2. Ranking of utility
3. Two commodities model
4. Goods are divisible
5. Axiom of completeness


PUACP