

Chapter 04

LINEAR EQUATIONS IN TWO VARIABLES

Graphical solution of a pair of linear simultaneous equations:

Procedure as follows:

Step- 1: Draw graph (straight line) for each equation.

Step- 2: Find the co-ordinates of the point of intersection of the two lines drawn.

Step- 3: The co-ordinates of the point of intersection will be the common solution of the given equation.

Example:

Solve the following simultaneous equations graphically.

$$4x - y = 13 \rightarrow (1)$$

$$5x + y = 14 \rightarrow (2)$$

Step- 1: From (1)

$$4x - y = 13 \rightarrow (1)$$

$$\Rightarrow 4x - 13 = y.$$

Step- 2:

Taking convenient values of 'x'

x	3	4	2
$y = 4x + 3$	-1	3	-5

Step- 3:

The co-ordinates are:
A (3,-1), B (4,3), C (2,-5)

From (2)

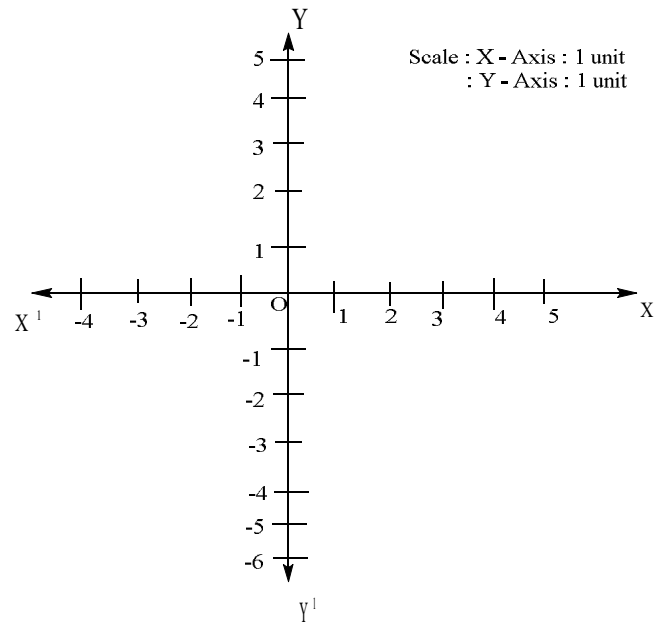
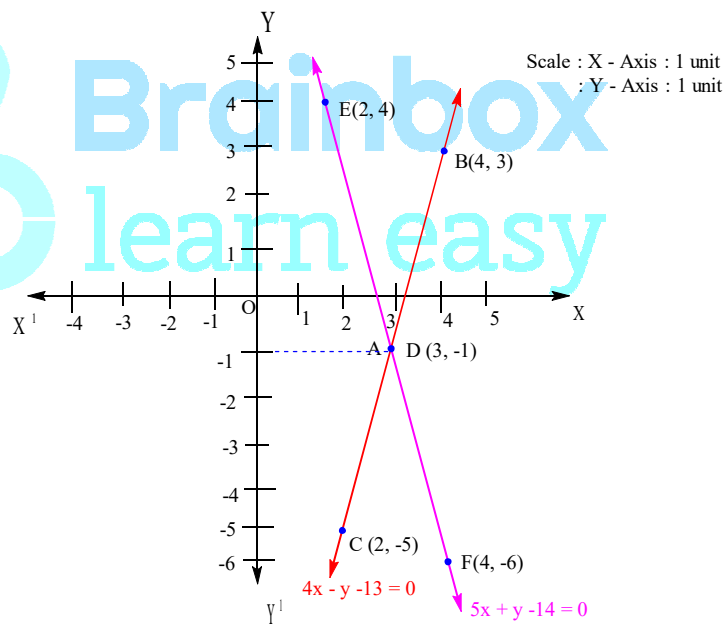
$$5x + y = 14 \rightarrow (2)$$

$$\Rightarrow y = -5x + 14$$

Taking convenient values of 'x'

x	3	2	4
$y = -5x + 14$	-1	4	-6

The co-ordinates are
E (2,4), D (3,-1), F (4,-6)

Step- 4:**Step- 5 & 6:**

The point of intersection of the two lines is $(3, -1)$.

Hence the solution set is $\boxed{x = 3, y = -1}$.