



Pair of Linear Equations in Two variables Ex 3.2 Q21

**Answer :**

(i) The given equations are

$$2x - 3y = 6 \quad \text{.....}(i)$$

$$x + y = 1 \quad \text{.....}(ii)$$

Putting  $x = 0$  in equation (i), we get:

$$\Rightarrow 2 \times 0 - 3y = 6$$

$$\Rightarrow y = -2$$

$$x = 0, \quad y = -2$$

Putting  $y = 0$  in equation (i) we get:

$$\Rightarrow 2x - 3 \times 0 = 6$$

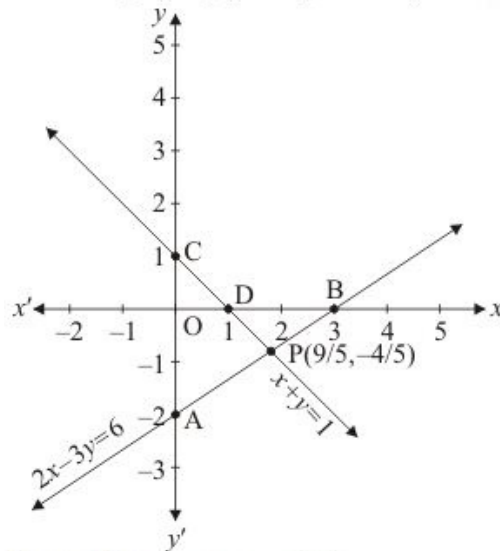
$$\Rightarrow x = 3$$

$$x = 3, \quad y = 0$$

Use the following table to draw the graph.

$x$	0	3
$y$	-2	0

Draw the graph by plotting the two points  $A(0, -2), B(3, 0)$  from table.



Graph of the equation....(ii):

$$x + y = 1 \quad \dots\dots(ii)$$

Putting  $x = 0$  in equation (ii) we get:

$$\Rightarrow 0 + y = 1$$

$$\Rightarrow y = 1$$

$$\therefore x = 0, \quad y = 1$$

Putting  $y = 0$  in equation (ii), we get:

$$\Rightarrow x + 0 = 1$$

$$\Rightarrow x = 1$$

$$x = 1, \quad y = 0$$

Use the following table to draw the graph.

$x$	0	1
$y$	1	0

Draw the graph by plotting the two points  $C(0, 1), D(1, 0)$  from table.

The two lines intersect at point  $P\left(\frac{9}{5}, -\frac{4}{5}\right)$ .

Hence the equations have unique solution.

(ii) The equations of graphs is

$$2y = 4x - 6$$

$$4x - 2y = 6 \quad \dots\dots(i)$$

$$2x = y + 3$$

$$2x - y = 3 \quad \dots\dots(ii)$$

Putting  $x = 0$  in equation (i), we get:

$$\Rightarrow 4 \times 0 - 2y = 6$$

$$\Rightarrow y = -3$$

$$\Rightarrow x = 0, \quad y = -3$$

Putting  $y = 0$  in equation (i), we get:

$$\Rightarrow 4x - 2 \times 0 = 6$$

$$\Rightarrow x = 3/2$$

$$x = 3/2, \quad y = 0$$

Use the following table to draw the graph.

$x$	0	$3/2$
$y$	-3	0

The graph of (i) can be obtained by plotting the two points  $A(0, -3), B(3/2, 0)$ .

Graph of the equation (ii)

$$2x - y = 3 \quad \dots\dots(ii)$$

Putting  $x = 0$  in equation (ii), we get.

$$\Rightarrow 2 \times 0 - y = 3$$

$$\Rightarrow y = -3$$

$$x = 0, \quad y = -3$$

Putting  $y = 0$  in equation (ii), we get.

$$\Rightarrow 2x - 0 = 3$$

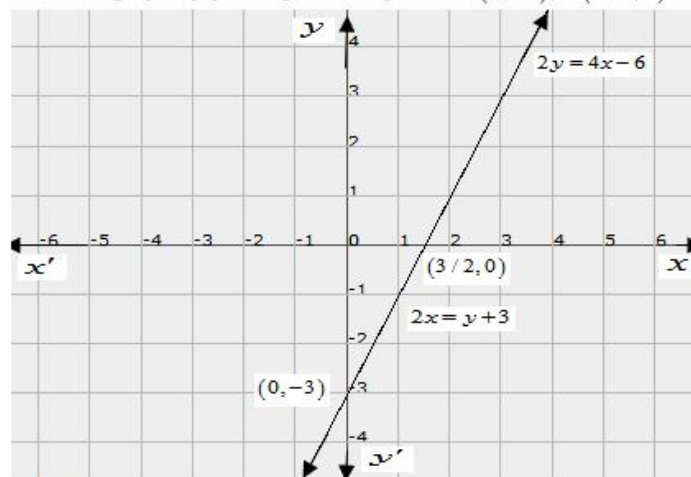
$$\Rightarrow x = 3/2$$

$$x = 3/2, \quad y = 0$$

Use the following table to draw the graph.

$x$	0	$3/2$
$y$	-3	0

Draw the graph by plotting the two points  $C(0, -3), D(3/2, 0)$  from table.



The two lines are coincident.

Hence the equations have infinitely much solution.

Hence the system is consistent

\*\*\*\*\* END \*\*\*\*\*