



Pair of Linear Equations in Two variables Ex 3.2 Q10

**Answer :**

The given equations are

$$2x + 3y + 5 = 0 \quad \text{.....}(i)$$

$$3x - 2y - 12 = 0 \quad \text{.....}(ii)$$

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

$$\Rightarrow 2 \times 0 + 3y = -5$$

$$\Rightarrow y = -5/3$$

$$x = 0, \quad y = -5/3$$

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

$$\Rightarrow 2x + 3 \times 0 = -5$$

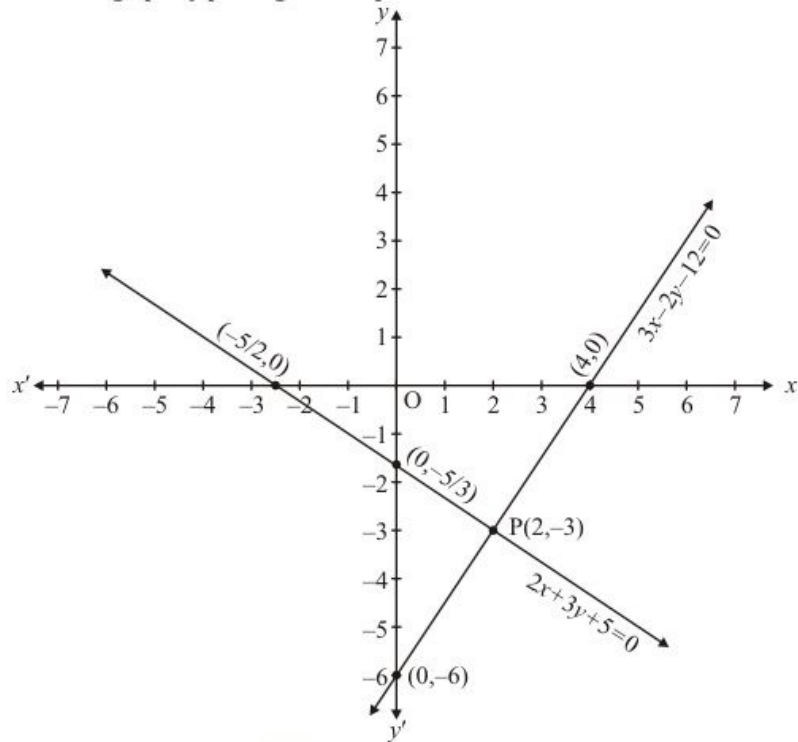
$$\Rightarrow x = -5/2$$

$$x = -5/2, \quad y = 0$$

Use the following table to draw the graph.

$x$	$0$	$-5/2$
$y$	$-5/3$	$0$

Draw the graph by plotting the two points from table.



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

$$3x - 2y = 12 \quad \text{.....(ii)}$$

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

$$\Rightarrow 3 \times 0 - 2y = 12$$

$$\Rightarrow y = -6$$

$$x = 0, \quad y = -6$$

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

$$\Rightarrow 3x - 2 \times 0 = 12$$

$$\Rightarrow x = 4$$

$$x = 4, \quad y = 0$$

Use the following table to draw the graph.

$x$	0	4
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$y$	-6	0
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Draw the graph by plotting the two points from table.

The two lines intersect at points  $P(2, -3)$

Hence,  $\boxed{x = 2}$  and  $\boxed{y = -3}$  is the solution.

### Answer :

The given equations are

$$2x + 3y = 6 \quad \dots\dots\dots(i)$$

$$4x + 6y = 12 \quad \dots\dots\dots(ii)$$

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:

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

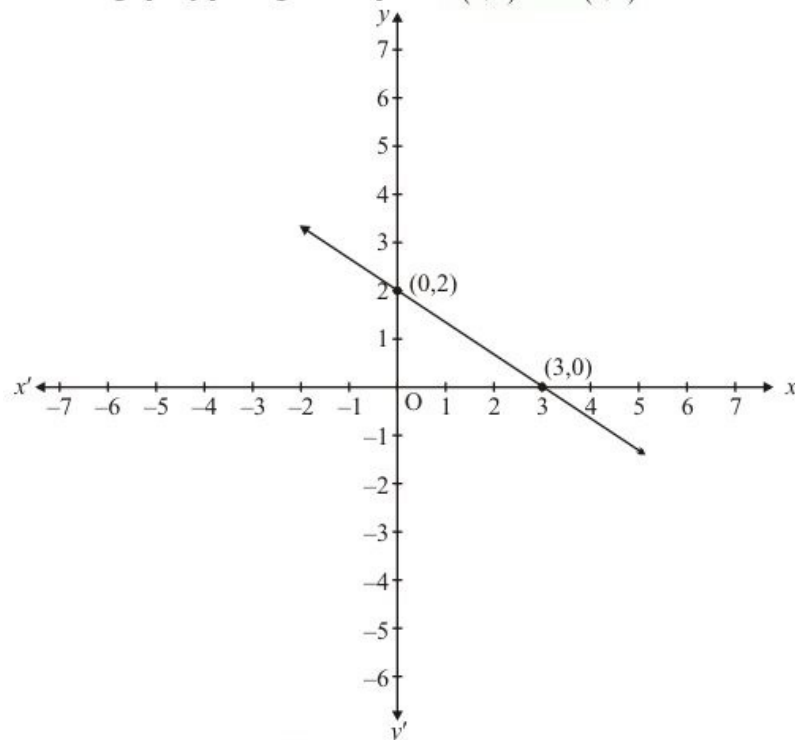
$$\Rightarrow x = 3$$

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

Use the following table to draw the graph.

$x$	0	3
$y$	2	0

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



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

$$4x + 6y = 12 \quad \text{.....(ii)}$$

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

$$\Rightarrow 4 \times 0 + 6y = 12$$

$$\Rightarrow y = 2$$

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

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

$$\Rightarrow 4x + 6 \times 0 = 12$$

$$\Rightarrow x = 3$$

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

Use the following table to draw the graph.

$x$	0	3
$y$	2	0

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

Thus the graph of the two equations coincide

Consequently, every solution of one equation is a solution of the other.

Hence the equations have infinitely many solutions.

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