



Pair of Linear Equations in Two variables Ex 3.2 Q14

Answer :

The given equations are

$$x - 2y + 11 = 0 \quad \dots\dots(i)$$

$$3x - 6y + 33 = 0 \quad \dots\dots(ii)$$

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

$$\Rightarrow 0 - 2y = -11$$

$$\Rightarrow y = 11/2$$

$$x = 0, \quad y = 11/2$$

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

$$\Rightarrow x - 2 \times 0 = -11$$

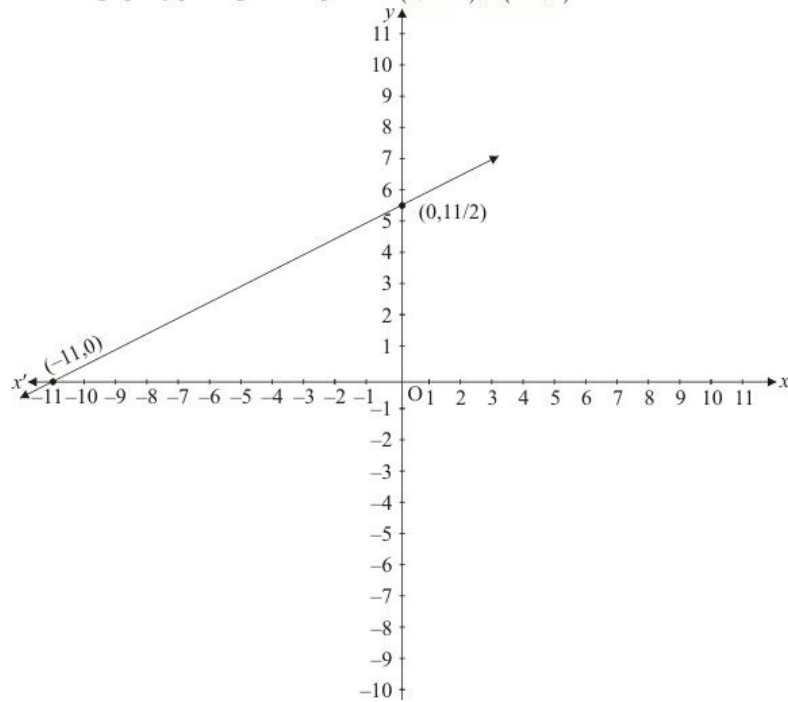
$$\Rightarrow x = -11$$

$$x = -11, \quad y = 0$$

Use the following table to draw the graph.

x	0	-11
y	11/2	0

Draw the graph by plotting the two points $A(0, 11/2), B(-11, 0)$ from table.



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

$$3x - 6y = -33 \quad \dots\dots(ii)$$

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

$$\Rightarrow 3 \times 0 - 6y = -33$$

$$\Rightarrow y = 11/2$$

$$x = 0, \quad y = 11/2$$

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

$$\Rightarrow 3x - 6 \times 0 = -33$$

$$\Rightarrow x = -11$$

$$x = -11, \quad y = 0$$

Use the following table to draw the graph.

x	0	-11
y	11/2	0

Draw the graph by plotting the two points $C(0, 11/2), D(-11, 0)$ from table.

Thus the graph of the two equations are coincide

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

Hence the equations have infinitely many solutions.

Answer :

The given equations are

$$3x - 5y = 20 \quad \dots\dots(i)$$

$$6x - 10y = -4 \quad \dots\dots(ii)$$

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

$$\Rightarrow 3 \times 0 - 5y = 20$$

$$\Rightarrow y = -4$$

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

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

$$\Rightarrow 3x - 5 \times 0 = 20$$

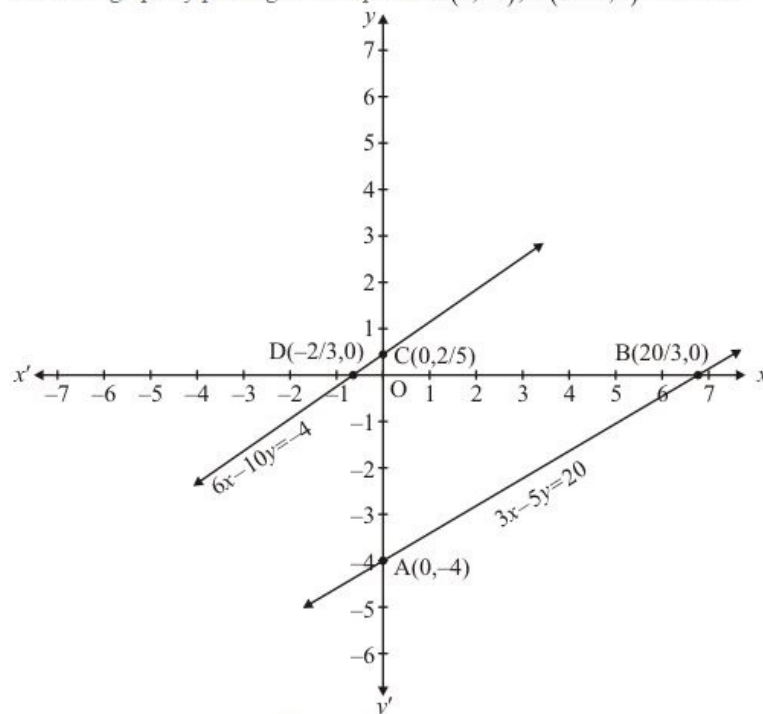
$$\Rightarrow x = 20/3$$

$$x = 20/3, \quad y = 0$$

Use the following table to draw the graph.

x	0	$20/3$
y	-4	0

Draw the graph by plotting the two points $A(0, -4)$, $B(20/3, 0)$ from table.



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

$$6x - 10y = -4 \quad \text{.....(ii)}$$

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

$$\Rightarrow 6 \times 0 - 10y = -4$$

$$\Rightarrow y = 2/5$$

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

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

$$\Rightarrow 6x - 10 \times 0 = -4$$

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

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

Use the following table to draw the graph.

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

Draw the graph by plotting the two points $C(0, -4)$, $D(20/3, 0)$ from table.

Here we see that the two lines are parallel

Hence the given system of equations has no solution.

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