



Pair of Linear Equations in Two variables Ex 3.2 Q24

Answer :

(i) The given equations are:

$$2x + 3y = 12 \quad \dots\dots(i)$$

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

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

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

$$\Rightarrow y = 4$$

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

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

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

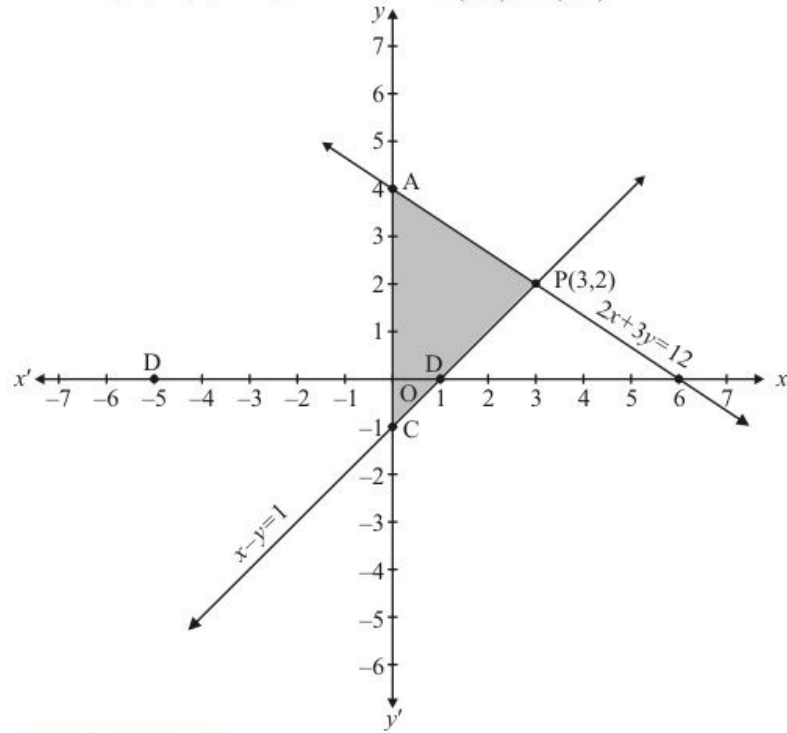
$$\Rightarrow x = 6$$

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

Use the following table to draw the graph.

x	0	6
y	4	0

Draw the graph by plotting the two points $A(0,4)$, $B(6,0)$ from table



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

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

$$\Rightarrow 0 - y = 1$$

$$\Rightarrow y = -1$$

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

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 $P(3,2)$. The region enclosed by the lines represented by the given equations and x -axis are shown in the above figure

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

(ii) The given equations are:

$$3x + 2y - 4 = 0 \quad \dots\dots(i)$$

$$2x - 3y - 7 = 0 \quad \dots\dots(ii)$$

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

$$\Rightarrow 3 \times 0 + 2y = 4$$

$$\Rightarrow y = 2$$

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

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

$$\Rightarrow 3x + 2 \times 0 = 4$$

$$\Rightarrow x = 4/3$$

$$x = 4/3, y = 0$$

Use the following table to draw the graph.

x	0	$4/3$
y	2	0

The graph of (i) can be obtained by plotting the two points $A(0, 2)$, $B(4/3, 0)$.

$$2x - 3y - 7 = 0 \quad \dots\dots(ii)$$

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

$$\Rightarrow 2 \times 0 - 3y = 7$$

$$\Rightarrow y = -7/3$$

$$x = 0, y = -7/3$$

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

$$\Rightarrow 2x - 3 \times 0 = 7$$

$$\Rightarrow x = 7/2$$

$$x = 7/2, y = 0$$

Use the following table to draw the graph.

x	0	$7/2$
y	$-7/3$	0

***** END *****