



Pair of Linear Equations in Two variables Ex 3.2 Q27

**Answer :**

The given equations are

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

$$4x + 3y - 20 = 0 \quad \dots\dots(ii)$$

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

$$\Rightarrow 4 \times 0 - 3y = -4$$

$$\Rightarrow y = 4/3$$

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

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

$$\Rightarrow 4x - 3 \times 0 = -4$$

$$\Rightarrow x = -1$$

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

Use the following table to draw the graph.

$x$	0	-1
$y$	4/3	0

The graph of (i) can be obtained by plotting the points  $(0, 4/3)$ ,  $(-1, 0)$ .

$$4x + 3y = 20 \quad \dots\dots(ii)$$

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

$$\Rightarrow 4 \times 0 + 3y = 20$$

$$\Rightarrow y = 20/3$$

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

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

$$\Rightarrow 4x + 3 \times 0 = 20$$

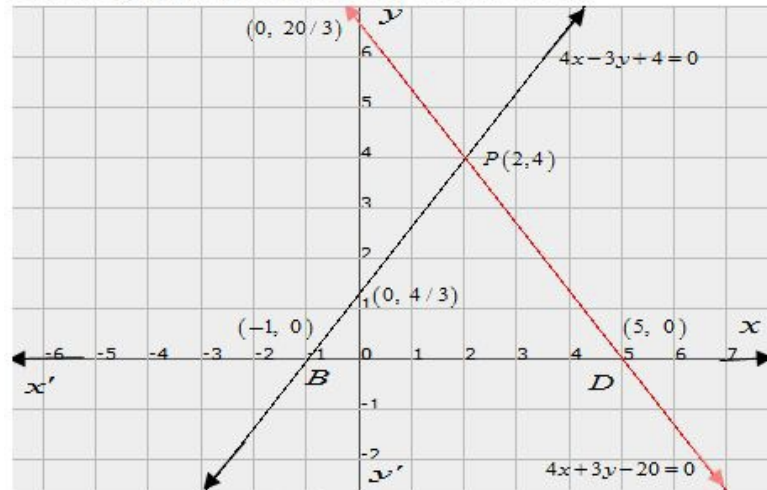
$$\Rightarrow x = 5$$

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

Use the following table to draw the graph.

$x$	0	5
$y$	20/3	0

Draw the graph by plotting the two points from table.



The two lines intersect at  $P(2, 4)$ .

Hence  $x = 2$ ,  $y = 4$  is the solution of the given equations.

Now,

$\Rightarrow$  Required area = Area of PBD

$\Rightarrow$  Required area =  $\frac{1}{2}(\text{base} \times \text{height})$

$\Rightarrow$  Required area =  $\frac{1}{2}(BD \times PM)$

$\Rightarrow$  Required area =  $\frac{1}{2}(6 \times 4)$

Hence, the area = 12 sq.units

Pair of Linear Equations in Two variables Ex 3.2 Q28

**Answer :**

The given equations are

$$3x + y - 11 = 0 \quad \dots\dots(i)$$

$$x - y - 1 = 0 \quad \dots\dots(ii)$$

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

$$\Rightarrow 3 \times 0 + y = 11$$

$$\Rightarrow y = 11$$

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

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

$$\Rightarrow 3x + 0 = 11$$

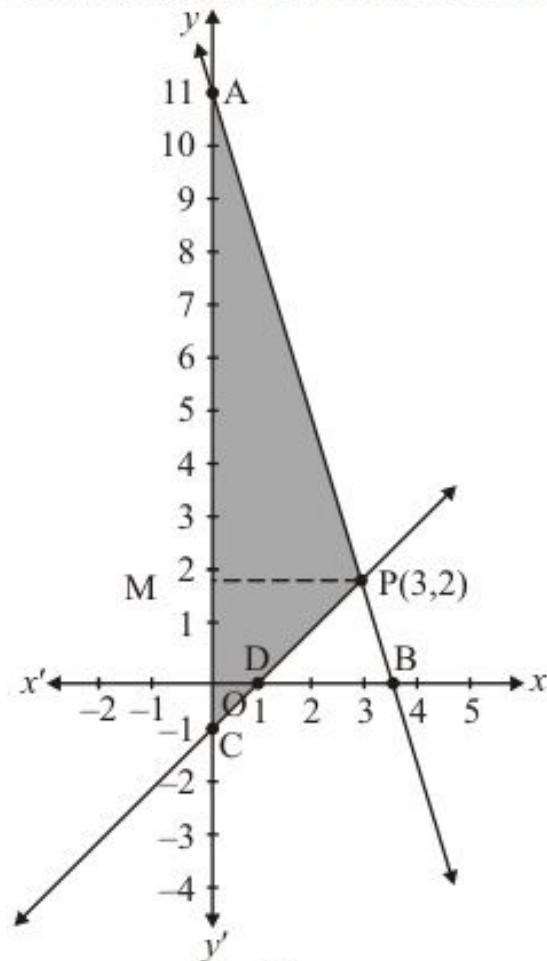
$$\Rightarrow x = 11/3$$

$$x = 11/3, \quad y = 0$$

Use the following table to draw the graph.

$x$	0	$11/3$
$y$	11	0

Draw the graph by plotting the two points from table.



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

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 from table.

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

Hence  $x = 3, \quad y = 2$  is the solution of the given equations

The area enclosed by the lines represented by the given equations and the  $y$ -axis is shaded region in the figure

Now, Required area = Area of shaded region

$$\Rightarrow \text{Required area} = \text{Area of } \triangle PAC$$

$$\Rightarrow \text{Required area} = \frac{1}{2}(\text{base} \times \text{height})$$

$$\Rightarrow \text{Required area} = \frac{1}{2}(AC \times PM)$$

$$\Rightarrow \text{Required area} = \frac{1}{2}(12 \times 3) \text{ sq. units}$$

Hence the required area is 18 sq. unit

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