Pair of Linear Equations in Two varibles Ex 3.2 Q24

Answer :

(i) The given equations are:

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

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

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

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

$\Rightarrow y=4$

$x=0,\ y=4$

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

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

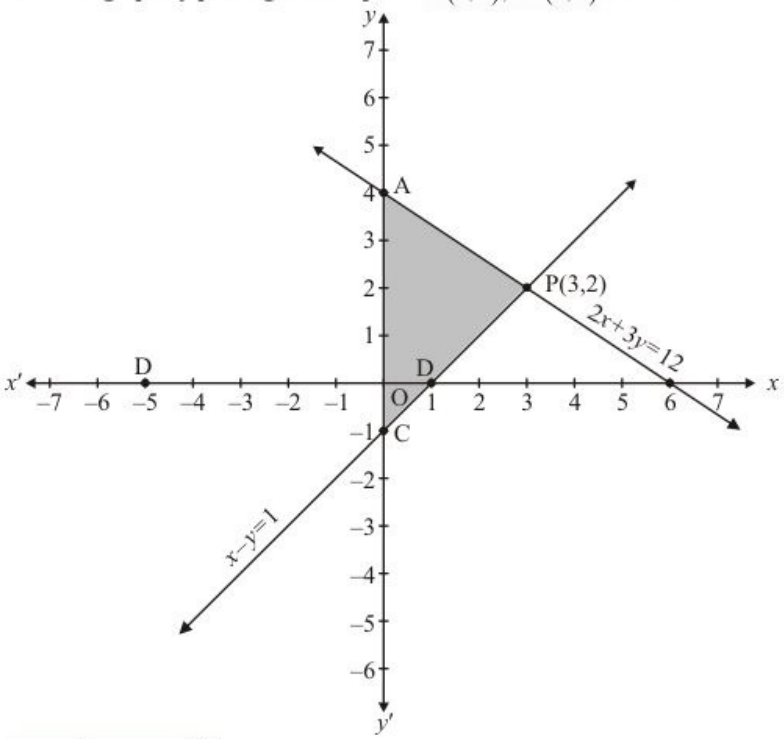
$\Rightarrow x=6$

$x=6,\ y=0$

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



$x-y=1 \qquad .....(ii)$

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:

$3x+2y-4=0 \qquad .....(i)$

$2x-3y-7=0 \qquad .....(ii)$

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 $A(0,2),\ \ B(4/3,0)$.

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

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 **********