Pair of Linear Equations in Two varibles Ex 3.2 Q36

Answer :

The given equations are

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

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

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

$\Rightarrow 0 + 3y = 6$

$\Rightarrow y = 2$

$x = 0, \quad y = 2$

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

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

$\Rightarrow x = 6$

$x = 6, \quad y = 0$

Use the following table to draw the graph.

x	0	6
y	2	0

The graph of (i) can be obtained by plotting the two points $A(0,2)$, $B(6,0)$.

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

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

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

$\Rightarrow y = -4$

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

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

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

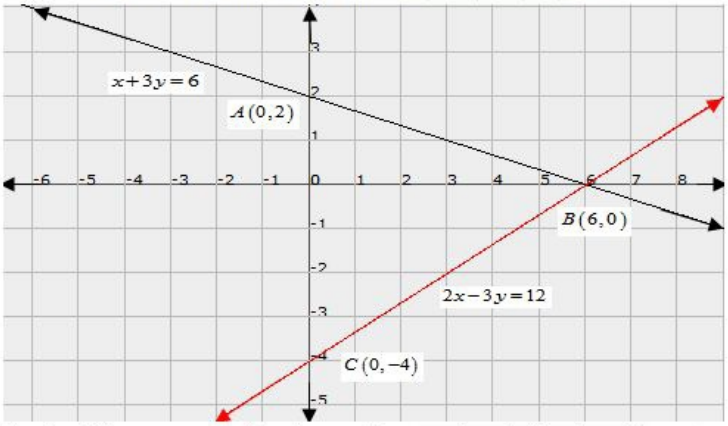
$\Rightarrow x = 6$

$x = 6, \quad y = 0$

Use the following table to draw the graph.

x	0	6
y	-4	0

Draw the graph by plotting the two points $C(0,-4), D(6,0)$ from table.



Graph of lines represented by the equations $x + 3y = 6$, $2x - 3y = 12$ meet y–axis at $A(0,2)$, $C(0,-4)$ respectively.

Pair of Linear Equations in Two varibles Ex 3.2 Q37

Answer :

(i) For intersecting lines,

Equation of another intersecting line to the given line is–

$$2x+5y-3=0$$

Since, condition for intersecting lines and unique solution is–

$$\frac{a_1}{a_2}\neq\frac{b_1}{b_2}$$

(ii) For parallel lines,

Equation of another parallel line to the given line is–

$$2x+3y-3=0$$

Since, condition for parallel lines and no solution is–

$$\frac{a_1}{a_2}=\frac{b_1}{b_2}\neq\frac{c_1}{c_2}$$

(iii) For co–incident lines,

Equation of another coincident line to the given line is–

$$4x+6y-16=0$$

Since, condition for coincident lines and infinite solution is–

$$\frac{a_1}{a_2}=\frac{b_1}{b_2}=\frac{c_1}{c_2}$$

********** END **********