



Exercise 3A

Question 9:

On a graph paper, draw a horizontal line $X'OX$ and a vertical line YOY' as the x -axis and the y -axis respectively.

Given equations are $2x - 5y + 4 = 0$
and $2x + y - 8 = 0$

Graph of $2x - 5y + 4 = 0$:

$$2x - 5y + 4 = 0 \Rightarrow y = \frac{2x + 4}{5} \text{ ----(1)}$$

Thus, we have the following table for $2x - 5y + 4 = 0$

x	-2	3	8
y	0	2	4

On the graph paper plot the points $A(-2, 0)$, $B(3, 2)$ and $C(8, 4)$
Join AB and BC to get AC

Thus, line AC is the graph of the equation $2x - 5y + 4 = 0$

Graph of $2x + y - 8 = 0$

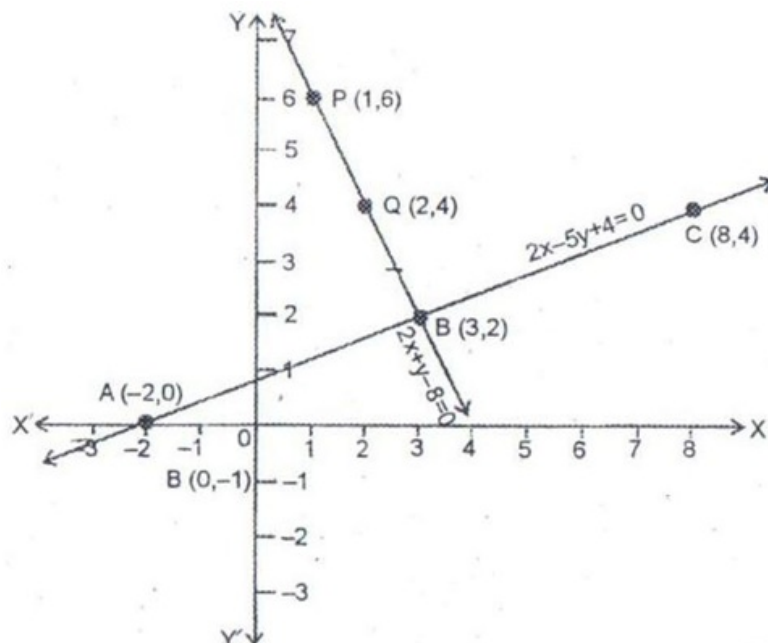
$$2x + y - 8 = 0 \Rightarrow y = -2x + 8 \text{ ---(2)}$$

Thus, we have the following table for $2x + y - 8 = 0$

x	1	3	2
y	6	2	4

On the same graph paper as above, plot the points $P(1, 6)$ and $Q(2, 4)$.

The third point $B(3, 2)$ has been already plotted.



Join PQ and QB to get to the line PB . Thus, line PB is the graph of the equation $2x + y - 8 = 0$.

The two graph lines intersect at the point $B(3, 2)$

$\therefore x = 3, y = 2$ is the solution of the given system of equations

Question 10:

On a graph paper, draw a horizontal line $X'OX$ and a vertical line YOY' as the x-axis and the y-axis respectively.

Given equations are $3x + y + 1 = 0$
and $2x + y - 8 = 0$

Graph of $3x + y + 1 = 0$:

$$3x + y + 1 = 0 \Rightarrow y = -3x - 1 \quad \text{---(1)}$$

Thus, we have the following table for $3x + y + 1 = 0$

x	0	-1	1
y	-1	2	-4

On the graph plot the points A (0, -1) and B (-1, 2) and C (1, -4)

Join AB and AC to get BC

Thus, line BC is the graph of equation $3x + y + 1 = 0$

Graph of $2x - 3y + 8 = 0$:

For graph of $2x - 3y + 8 = 0$

$$2x - 3y + 8 = 0 \Rightarrow y = \frac{2x + 8}{3} \quad \text{--- (2)}$$

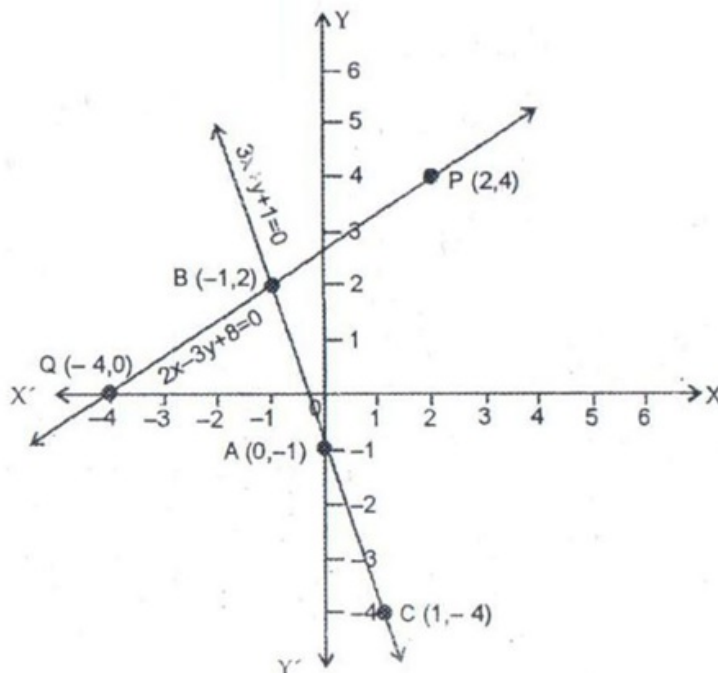
Thus, we have the following table for equation (2)

x	-1	2	-4
y	2	4	0

On the same graph as above, plot the points P (2, 4) and Q (-4, 0).

The point B (-1, 2) has been already plotted.

Join PB and BQ to get PQ.



Thus the line PQ is graph of equation $2x - 3y + 8 = 0$

The two graph lines intersect at the point B(-1, 2)

$\therefore x = -1, y = 2$ is the solution of the given system of equations.

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