



Exercise 3A

Question 5:

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 $2x - 3y = 1$
and $3x - 4y = 1$

Graph of $2x - 3y = 1$:

$$2x - 3y = 1 \Rightarrow 3y = 2x - 1$$

$$y = \frac{2x - 1}{3}$$

Thus, we have the following table for $2x - 3y = 1$

x	-1	2	5
y	-1	1	3

On the graph paper plot the points A (-1, -1), B (2, 1) and C (5, 3)

Join AB and BC to get AC

Thus, line AC is the graph of $2x - 3y = 1$

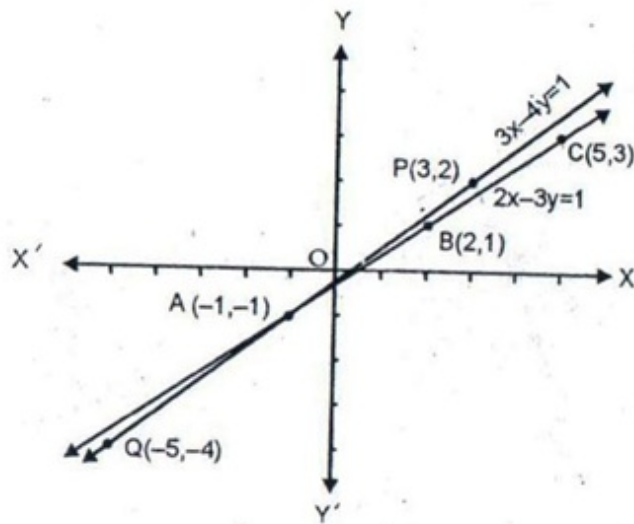
Graph of $3x - 4y = 1$

$$3x - 4y = 1$$

$$\Rightarrow y = \frac{3x - 1}{4}$$

Thus, we have the following table for $3x - 4y = 1$

x	-1	3	-5
y	-1	2	-4



On the same graph paper as above, plot the points

$P(3, 2)$ and $Q(-5, -4)$

The point $A(-1, -1)$ has been already plotted.

Join PA and QA to get line PQ

Thus, line PQ is the graph of the equation $3x - 4y = 1$

Thus two graph lines intersect at the point $A(-1, -1)$

Question 6:

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 $4x + 3y = 5$

and $2y - x = 7$

Graph of $4x + 3y = 5$:

$$4x + 3y = 5 \Rightarrow y = \frac{5 - 4x}{3} \quad \text{---(1)}$$

thus, we have the following table for $4x + 3y = 5$

x	-1	2	5
y	3	-1	-5

On the graph paper plot the point $A(-1, 3)$ and $B(2, -1)$, $C(5, -5)$

Join AB and BC to get AC

Thus, line AC is the graph of $4x + 3y = 5$

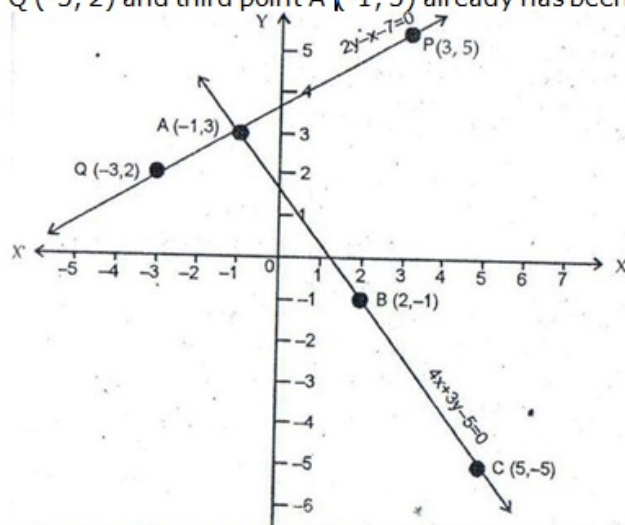
Graph of $2y - x = 7$:

$$\text{For graph of } 2y - x = 7 \Rightarrow y = \frac{7 + x}{2} \quad \text{---(2)}$$

Thus, we have the following table for $2y - x = 7$

x	-1	3	-3
y	3	5	2

On the same graph paper as above, plot the points P (3, 5) and Q (-3, 2) and third point A (-1, 3) already has been plotted.



Join PA and QA to get line PQ

Thus, line PQ is the graph of the equation $2y - x = 7$

The two graph lines intersect at point A(-1, 3)

$\therefore x = -1, y = 3$ is the solution of the given system of equations

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