



### Exercise 3A

Question 7:

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

**Graph of  $x + 2y + 2 = 0$ :**

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

thus, we have the following table for  $x + 2y + 2 = 0$

x	-2	0	2
y	0	-1	-2

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

Join AB and BC to get AC

Thus, the line AC is the graph of  $x + 2y + 2 = 0$

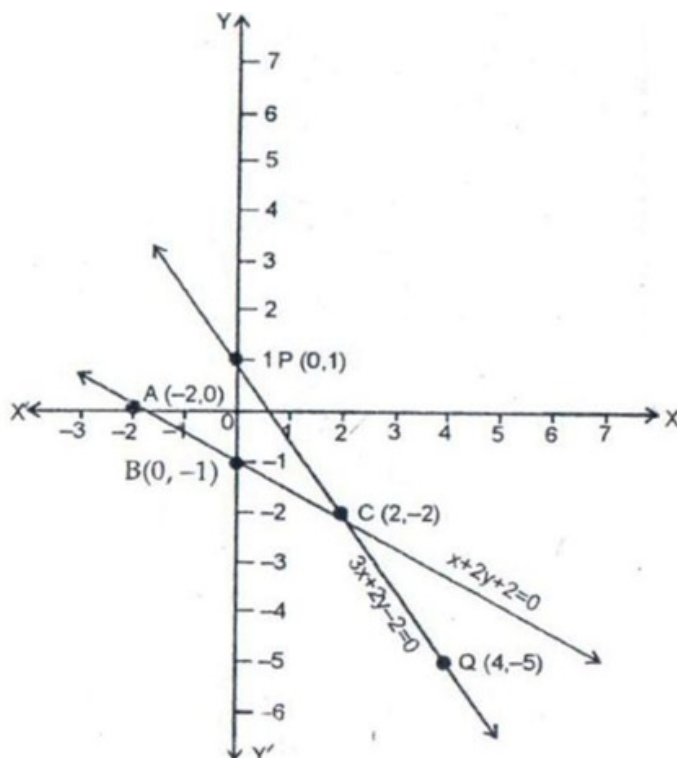
**Graph of  $3x + 2y - 2 = 0$ :**

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

Thus, we have the following table for  $3x + 2y - 2 = 0$

x	0	2	4
y	1	-2	-5

On the graph paper as above plot the points P (0, 1) and Q (4, -5) and third point C (2, -2) is already plotted.



Join PC and QC to get line PQ

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

Two graph lines intersect at the point C (2, -2)

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

Question 8:

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  $2x + 3y = 8$   
and  $x - 2y + 3 = 0$

**Graph of  $2x + 3y = 8$ :**

$$2x + 3y = 8 \Rightarrow y = \frac{8 - 2x}{3} \text{ --- (1)}$$

Thus, we have the following table for  $2x + 3y = 8$

x	1	-5	7
y	2	6	-2

On the graph paper plot the points  $A(1, 2)$ ,  $B(-5, 6)$  and  $C(7, -2)$

Join AB and AC to get BC

Thus the line AC is the equation of  $2x + 3y = 8$

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

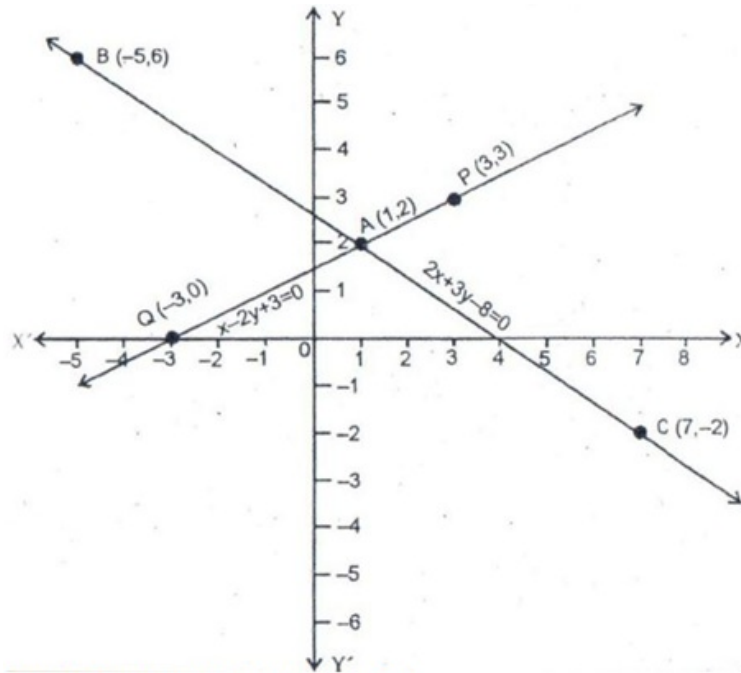
$$\text{For graph of } x - 2y + 3 = 0 \Rightarrow y = \frac{x + 3}{2} \text{ --- (2)}$$

Thus, we have the following table for  $x - 2y + 3 = 0$

x	1	3	-3
y	2	3	0

On the same graph paper as above, plot the points  $P(3, 3)$  and  $Q(-3, 0)$ .

The point  $A(1, 2)$  has been already plotted.



Join PA and QA to get the line PQ

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

The two graph lines intersect at the point  $A(1, 2)$

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

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