Exercise 3A

Question 11:

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

Given equations are 3x - 2y + 2 = 0

and $\frac{3}{2}x - y + 3 = 0$

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

$3x - 2y + 2 = 0 \therefore y = \frac{3x + 2}{2} - - - (1)$

We have the following table for 3x - 2y + 2 = 0

x	0	2	-2
y	1	4	-2

Plot the points A (0, 1), B (2, 4) and C (-2, -2) on the graph paper.
Join AB and AC to get the graph of line BC.
Extend it on both sides.
Therefore, BC is the graph of line 3x - 2y + 2 = 0

Graph of $\frac{3}{2}x - y + 3 = 0$:

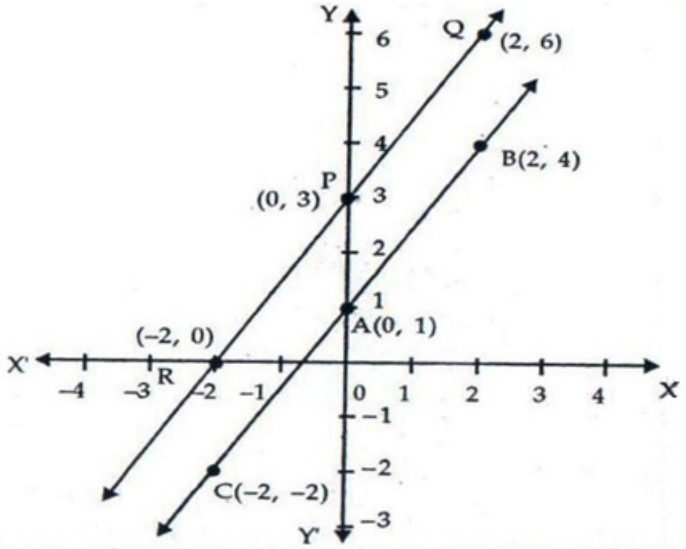
$\frac{3}{2}x - y + 3 = 0 \therefore y = \frac{3}{2}x + 3 - - - (2)$

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

x	0	2	-2
y	3	6	0

On the same graph paper, plot the points P (0, 3), Q (2, 6) and R (-2, 0)
Join PQ and PR to get the line QR.
Extend it on both sides

Thus, line QR is the graph of equation $\frac{3}{2}x - y + 3$



It is clear from the graph that the two lines are parallel and do not intersect even when produced.
∴ Given equations are inconsistent and has no solution.

The coordinates of the points where these, lines meet y - axis are A (0, 1) and B (0, 3) respectively.

Question 12:

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

Given equations are 3x + y - 5 = 0
and 2x - y - 5 = 0

Graph of 3x + y - 5 = 0:

For the graph of 3x + y - 5 = 0 or y = -3x + 5 ---(1)
We have the following table for 3x + y - 5 = 0

x	0	1	2
y	5	2	-1

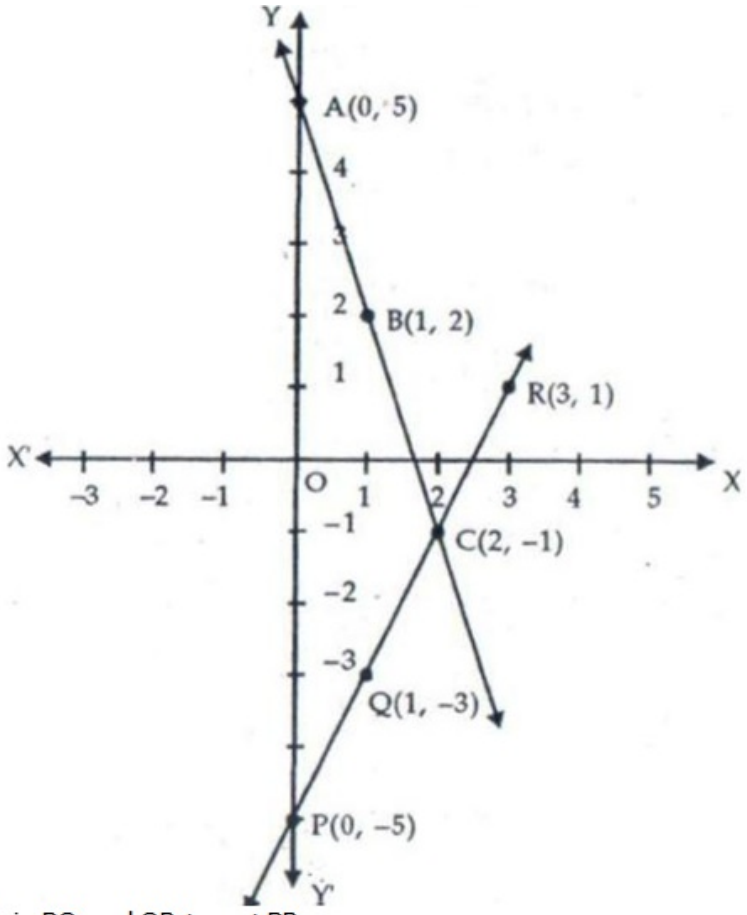
Plot the points A (0, 5), B (1, 2) and C (2, -1).
Join AB and BC to get AC
The line AC is the graph of the equation 3x + y - 5 = 0

Graph of 2x - y - 5 = 0:

For the graph of 2x - y - 5 = 0 or y = 2x - 5 ---(2)
We have the following table for 2x - y - 5 = 0

x	0	1	3
y	-5	-3	1

On the same graph paper, plot the points P(0, -5), Q(1, -3) and R(3,1)



Join PQ and QR to get PR
The line PR is the graph of 2x - y - 5 = 0
The lines (1) and (2) intersect y-axis at (0, 5) and (0, -5) respectively.

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