Exercise 3A

Question 25:

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

The given system of equations is
2x + 3y = 4, 4x + 6y = 12

Graph of 2x + 3y = 4:

$2x + 3y = 4 \Rightarrow y = \frac{-2x+4}{3}$ ---(1)

Thus, we have the following table for the equation (1)

x	2	-1	-4
y	0	2	4

On the graph paper plot the points A (2, 0) and B (-1, 2) and C (-4, 4)
Join AB and BC to get AC
Thus, line AC is the graph of the equation 2x + 3y = 4

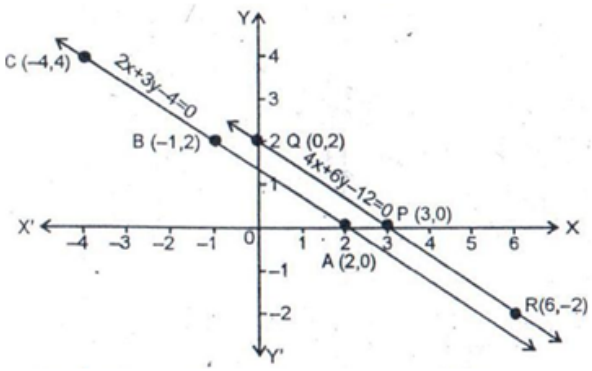
Graph of 4x + 6y = 12:

$4x + 6y = 12 \Rightarrow y = \frac{-4x+12}{6} \quad ---(2)$

Thus, we have following table for equation (2)

x	3	0	6
y	0	2	-2

On the same graph plot the points P (3, 0) and Q (0, 2) and R (6,-2)
Join PQ and PR to get QR
Thus, line QR is the graph of the equation 4x + 6y = 12



It is clear from the graph that two graph lines are parallel and do not intersect when produced
Hence, the given system of equation is inconsistent

Question 26:

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

The given system of equations is
2y -x = 9, 4y - 2x = 20

Graph of 2y -x = 9:

$2y - x = 9 \Rightarrow y = \frac{x+9}{2} - - - (1)$

Thus, we have following table for equation (1)

x	1	-1	-3
y	5	4	3

On the graph plot the points A(1, 5), B(-1, 4), C(-3, 3)
Join AB and BC to get AC
Thus line AC is the graph of the equation 2y -x = 9

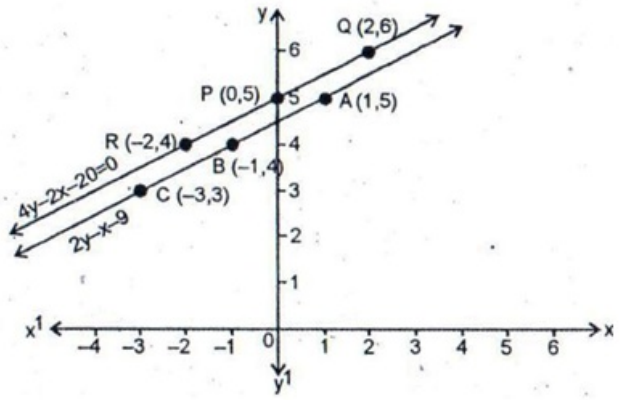
Graph of 4y - 2x = 20:

$4y - 2x = 20 \Rightarrow y = \frac{2x+20}{4} - - - (2)$

Thus, we have following table for equation (2)

x	0	2	-2
y	5	6	4

On the graph plot the points P(0, 5), Q(2, 6) and R(-2, 4)
Join PQ and PR to get QR
Thus, line QR is the graph of the equation 4y - 2x = 20



It is clear from the graph that two graph lines are parallel and do not intersect even when produced.
Hence, the given system of equation is inconsistent.

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