



Exercise 3B

Question 11:

The given equations are

$$7 - 4x = 3y$$

$$-4x - 3y = -7$$

$$4x + 3y = 7 \text{ ----(1)}$$

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

Subtracting (2) from (1),

$$2x = 8 \quad \therefore x = 4$$

Substituting $x = 4$ in (1), we get

$$4 \times 4 + 3y = 7 \Rightarrow 3y = 7 - 16 \Rightarrow 3y = -9$$

$$y = -3$$

\therefore Solution is $x = 4, y = -3$

Question 12:

The given equations are

$$2x + 5y = \frac{8}{3} \text{ ----(1)}$$

$$3x - 2y = \frac{5}{6} \text{ ----(2)}$$

Multiplying (1) by 2 and (2) by 5

$$4x + 10y = \frac{16}{3} \text{ --- (3)}$$

$$15x - 10y = \frac{25}{6} \text{ --- (4)}$$

Adding (3) and (4), we get

$$19x = \frac{57}{6} \Rightarrow x = \frac{57}{6 \times 19} = \frac{1}{2}$$

Substituting $x = \frac{1}{2}$ in (3), we get

$$4 \times \frac{1}{2} + 10y = \frac{16}{3}$$

$$10y = \frac{16}{3} - 2 \Rightarrow 10y = \frac{10}{3}$$

$$y = \frac{10}{3 \times 10} = \frac{1}{3}$$

$$\therefore \text{Solution is } x = \frac{1}{2}, y = \frac{1}{3}$$

Question 13:

The given equations are:

$$\frac{x}{3} + \frac{y}{4} = 11$$

$$\frac{5x}{6} - \frac{y}{3} = -7$$

$$\frac{x}{3} + \frac{y}{4} = 11 \text{ (by taking L.C.M)}$$

$$\frac{4x + 3y}{12} = 11$$

$$4x + 3y = 132 \text{ --- (1)}$$

$$\frac{5x}{6} - \frac{y}{3} = -7 \text{ (by taking L.C.M)}$$

$$\frac{5x - 2y}{6} = -7$$

$$5x - 2y = -42 \text{ --- (2)}$$

$$4x + 3y = 132$$

$$5x - 2y = -42$$

Multiplying (1) by 2 and (2) by 3

$$8x + 6y = 264 \text{ --- (3)}$$

$$15x - 6y = -126 \text{ --- (4)}$$

Adding (3) and (4), we get

$$23x = 138 \Rightarrow x = 6$$

Substituting $x = 6$ in (1), we get

$$4 \times 6 + 3y = 132 \Rightarrow 3y = 132 - 24$$

$$3y = 108$$

$$y = 36$$

\therefore Solution is $x = 6, y = 36$

***** END *****