



Exercise 3B

Question 8:

The given equations are

$$2x - \frac{3y}{4} = 3 \quad \text{-----(1)}$$

$$5x = 2y + 7 \quad \text{-----(2)}$$

Multiplying (1) by 2 and (2) by $\frac{3}{4}$

$$4x - \frac{3y}{2} = 6 \quad \text{-----(3)}$$

$$\frac{15}{4}x - \frac{3}{2}y = \frac{21}{4} \quad \text{---(4)}$$

Subtracting (3) from (4), we get

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

$$-x = -3 \Rightarrow x = 3$$

Substituting $x = 3$ in (1), we get

$$2 \times 3 - \frac{3y}{4} = 3$$

$$-\frac{3y}{4} = 3 - 6$$

$$-\frac{3y}{4} = -3 \Rightarrow y = \frac{-3 \times 4}{-3} = 4$$

\therefore solution is $x = 3$ and $y = 4$

Question 9:

The given equations are

$$11x + 15y + 23 = 0 \text{ ---(1)}$$

$$7x - 2y - 20 = 0 \text{ ---(2)}$$

Multiplying (1) by 2 and (2) by 15

$$22x + 30y = -46 \text{ ---(3)}$$

$$105x - 30y = 300 \text{ ---(4)}$$

Adding (3) and (4), we get

$$127x = 254 \Rightarrow x = \frac{254}{127} = 2$$

Substituting $x = 2$ in (1), we get

$$11 \times 2 + 15y = -23$$

$$15y = -23 - 22 \Rightarrow 15y = -45$$

$$y = -3$$

\therefore solution is $x = 2, y = -3$

Question 10:

The given equations are

$$2x - 5y + 8 = 0 \text{ ---(1)}$$

$$x - 4y + 7 = 0 \text{ ---(2)}$$

Multiplying (1) by 4 and (2) by 5

$$8x - 20y = -32 \text{ ---(3)}$$

$$5x - 20y = -35 \text{ ---(4)}$$

Subtracting (3) from (4), we get

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

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

$$2 \times 1 - 5y = -8$$

$$-5y = -8 - 2 \Rightarrow -5y = -10$$

$$\therefore y = 2$$

\therefore solution is $x = 1, y = 2$

***** END *****