



### Exercise 3B

Question 1:

The given equations are

$$x + y = 8 \quad \text{---(1)}$$

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

Multiplying (1) by 3 and (2) by 1, we get

$$3x + 3y = 24 \quad \text{---(3)}$$

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

Adding (3) and (4), we get

$$5x = 25 \Rightarrow x = \frac{25}{5} \Rightarrow x = 5$$

Substituting  $x = 5$  in (1), we get

$$5 + y = 8 \Rightarrow y = 8 - 5 = 3$$

$$\therefore x = 5 \text{ and } y = 3$$

Question 2:

The given equations are

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

$$3x - 2y = 10 \quad \text{---(2)}$$

Multiplying (1) by 2 and (2) by 1, we get

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

$$3x - 2y = 10 \quad \text{---(4)}$$

Subtracting (3) from (4), we get  $x = 4$

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

$$4 - y = 3 \Rightarrow y = 4 - 3 = 1$$

$$\therefore x = 4, y = 1$$

Question 3:

The given equations are

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

$$4x - 3y = 26 \text{ ---(2)}$$

By Multiplying (1) by 3 and (2) by 1, we get

$$3x + 3y = 9 \text{ ---(3)}$$

$$4x - 3y = 26 \text{ ----(4)}$$

Adding (3) and (4), we get

$$7x = 35 \Rightarrow x = 5$$

Substituting  $x = 5$  in (1), we get

$$x + y = 3$$

$$5 + y = 3 \Rightarrow y = 3 - 5 = -2$$

$$\therefore x = 5, y = -2$$

Question 4:

The given equations are

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

$$3x + 4y = 5 \text{ ---(2)}$$

Multiplying (1) by 4 and (2) by 3, we get

$$8x + 12y = 0 \text{ ---(3)}$$

$$9x + 12y = 15 \text{ ---(4)}$$

Subtracting (3) from (4), we get

$$x = 15$$

Substituting  $x = 15$  in (1), we get

$$2 \times 15 + 3y = 0 \Rightarrow 3y = 0 - 30$$

$$3y = -30 \text{ or } y = -10$$

$$\therefore x = 15, y = -10$$

\*\*\*\*\* END \*\*\*\*\*