

Exercise 3B

Question 5:

The given equations are
$$2x - 3y = 13 ---(1)$$

 $7x - 2y = 20 ---(2)$
Multiplying (1) by 2 and (2) by 3, we get $4x - 6y = 26 ---(3)$
 $21x - 6y = 60 ---(4)$

Subtracting (3) from (4), we get
$$17x = 34 \Rightarrow x = 2$$

Substituting $x = 2$ in (1), we get $2 \times 2 - 3y = 13 \Rightarrow 4 - 3y = 13$
 $-3y = 13 - 4 \Rightarrow -3y = 9$
 $y = -3$
 \therefore Solution is $x = 2$, $y = -3$

Question 6:

The given equations are
$$3x - 5y - 19 = 0 - - - (1)$$

 $-7x + 3y + 1 = 0 - - - (2)$
Multiplying (1) by 3 and (2) by 5, we get $9x - 15y = 57 - - - (3)$
 $-35x + 15y = -5 - - - (4)$

Adding (3) and (4), we get
$$-26x = 52 \Rightarrow x = -2$$

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

$$3 \times (-2) - 5y = 19 \Rightarrow -6 - 5y = 19$$

 $-5y = 19 + 6 \Rightarrow -5y = 25$
 $y = -5$
 \therefore solution is $x = -2$, $y = -5$

Question 7:

The given equations are

$$4x - 3y = 8 ---(1)$$

$$6x - y = \frac{29}{3}$$
 ---(2)

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

$$4x - 3y = 8 ---(3)$$

$$18x - 3y = 29 ---(4)$$

Subtracting (3) from (4), we get

$$14x = 21 \Rightarrow x = \frac{21}{14} = \frac{3}{2}$$

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

$$4 \times \frac{3}{2} - 3y = 8 \Rightarrow 6 - 3y = 8$$
$$-3y = 2$$
$$y = \frac{-2}{3}$$

∴ Solution is
$$x = \frac{3}{2}$$
 and $y = \frac{-2}{3}$

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