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

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

$-3y = 2$

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

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

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