



Exercise 2A

Question 1:

We have

$$f(x) = (x^2 + 3x - 10)$$

$$= x^2 + 5x - 2x - 10$$

$$= x(x + 5) - 2(x + 5)$$

$$= (x + 5)(x - 2)$$

$$\therefore f(x) = 0 \Rightarrow (x + 5)(x - 2) = 0$$

$$\Rightarrow x + 5 = 0 \text{ or } x - 2 = 0$$

$$\Rightarrow x = -5 \text{ or } x = 2$$

$$\text{Sum of zeroes} = (-5) + 2 = -3 = \frac{-3}{1} = \frac{-(\text{coefficient of } x)}{(\text{coefficient of } x^2)}$$

Product of zeroes

$$= (-5) \times (2) = -10 = \frac{-10}{1} = \frac{\text{Constant term}}{\text{coefficient of } x^2}$$

Question 2:

We have

$$f(x) = (6x^2 - 7x - 3)$$

$$= 6x^2 - 9x + 2x - 3$$

$$= 3x(2x - 3) + 1(2x - 3)$$

$$(2x - 3)(3x + 1)$$

$$\therefore f(x) = 0 \Rightarrow (2x - 3)(3x + 1) = 0$$

$$\Rightarrow 2x - 3 = 0 \text{ or } 3x + 1 = 0$$

$$x = \frac{3}{2} \text{ or } x = \frac{-1}{3}$$

So, the zeroes of $f(x)$ are $\frac{3}{2}$ and $\frac{-1}{3}$

$$\text{Sum of zeroes} = \frac{3}{2} + \left(\frac{-1}{3}\right) = \frac{7}{6} = \frac{-(\text{coefficient of } x)}{(\text{coefficient of } x^2)}$$

$$\text{Product of zeroes} = \left(\frac{3}{2}\right) \times \left(\frac{-1}{3}\right) = \frac{-3}{6} = \frac{\text{constant term}}{(\text{coefficient of } x^2)}$$

Question 3:

$$f(x) = 4x^2 - 4x - 3 = 4x^2 - 6x + 2x - 3$$

$$= 2x(2x - 3) + (2x - 3) = (2x - 3)(2x + 1)$$

$$\text{Now, } f(x) = 0 \Rightarrow (2x - 3)(2x + 1) = 0$$

$$\therefore 2x - 3 = 0 \text{ or } 2x + 1 = 0$$

$$\text{or } x = \frac{3}{2}, x = -\frac{1}{2}$$

$$\text{Sum of zeroes} = \frac{3}{2} + \left(-\frac{1}{2}\right) = \frac{3-1}{2} = \frac{2}{2} = 1$$

$$= \frac{-(-4)}{4} = -\frac{\text{coeff. of } x}{\text{coeff. of } x^2}$$

$$\text{Product of zeroes} = \left(\frac{3}{2}\right) \times \left(-\frac{1}{2}\right) = -\frac{3}{4}$$

$$= \frac{\text{constant term}}{\text{coeff. of } x^2}$$

***** END *****