

$$\begin{aligned}
 1 \text{ (vi)} \quad & 3x^2 - x - 4 \\
 & = 3x^2 - 4x + 3x - 4 \\
 & = x(3x - 4) + 1(3x - 4) \\
 & = (3x - 4)(x + 1)
 \end{aligned}$$

For finding zeros

$$\begin{aligned}
 3x - 4 & = 0, \quad x + 1 = 0 \\
 \Rightarrow x & = \frac{4}{3}, \quad x = -1
 \end{aligned}$$

$$\text{Sum of zeros} = \frac{4}{3} + (-1)$$

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

$$= \frac{1}{3}$$

$$= -\left(\frac{-1}{3}\right)$$

$$= -\frac{b}{a} \quad \left[\because \begin{matrix} b = -1 \\ a = 3 \end{matrix} \right]$$

$$\text{Product of zeros} = \frac{4}{3} \times (-1)$$

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

$$= \frac{c}{a} \quad \left[\because \begin{matrix} c = -4 \\ a = 3 \end{matrix} \right]$$