

Chapter 02

POLYNOMIALS

Relationship between zeroes and co-efficients of a polynomial:

- I. Let α, β be the roots of quadratic polynomial equation $ax^2 + bx + c = 0$ then by the factor theorem.

$$ax^2 + bx + c = a(x - \alpha)(x - \beta) = a(x^2 - (\alpha + \beta)x + \alpha\beta)$$

By comparing Co-efficient of

$$\begin{aligned} \text{'x'} \rightarrow \alpha + \beta &= -\frac{b}{a} = -\frac{\text{coeff of 'x'}}{\text{coeff of } x^2} \\ \text{'constant'} \rightarrow \alpha\beta &= \frac{c}{a} = \frac{\text{constant term}}{\text{coeff of } x^2} \end{aligned}$$