

## Chapter 02

### POLYNOMIALS

#### Formation of a quadratic polynomial:

##### Example:

Form a quadratic polynomial whose sum of zeros and product of zeroes are  $\sqrt{2}$  and 3 respectively.

##### Solution:

Given,

$$S = \text{Sum of roots} = \sqrt{2}$$

$$P = \text{Product of roots} = 3 - \sqrt{2}$$

Required quadratic polynomial is  $a(x^2 - Sx + P)$ .

Where  $\lambda$  is any non-zero real number.

$$\Rightarrow a \left( x^2 - \sqrt{2}x + \frac{1}{3} \right)$$

If  $\lambda = 3$ , then the quadratic polynomial is,

$$3x^2 - 3\sqrt{2}x + 1.$$