

## Polynomials 2

General form :-

- 1 Linear  $\rightarrow ax + b$
- 2 Quadratic  $\rightarrow ax^2 + bx + c$
- 3 Cubic  $\rightarrow ax^3 + bx^2 + cx + d$
- 4 Biquadratic  $\rightarrow ax^4 + bx^3 + cx^2 + dx + e$

Degree  $\rightarrow$  Highest power

Real coefficients

Zero of the Polynomial

:-  $x$  की की value जिसे पूर्ण करने

से 0 तक जारी /

Represent the zeroes by

:-  $\alpha \quad \beta \quad \gamma$   
alpha      beta      Gamma

Relation between the zeroes & coefficients

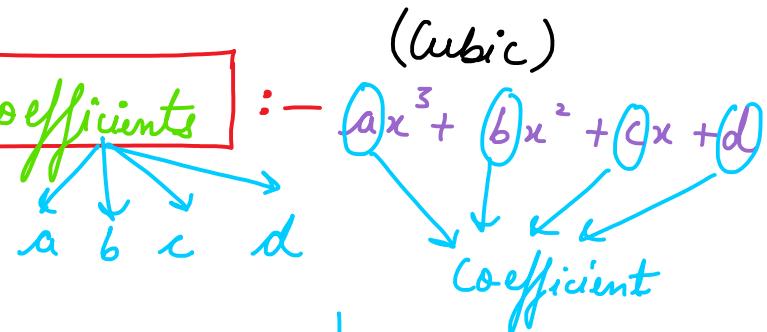


:- (Quadratic)  
 $ax^2 + bx + c$   
coefficients

$$S = \alpha + \beta = -\frac{b}{a}$$

$$P = \alpha \cdot \beta = \frac{c}{a}$$

**Relation between the zeros & coefficients**



$$S = \alpha + \beta + \gamma = -\frac{b}{a}$$

$$S.P. = \alpha \cdot \beta + \beta \cdot \gamma + \gamma \cdot \alpha = \frac{c}{a}$$

$$P = \alpha \cdot \beta \cdot \gamma = -\frac{d}{a}$$

Find ? **Quadratic Polynomial** :-  

$$k(x^2 - Sx + P)$$

Find ? **Cubic Polynomial** :-

$$k(x^3 - Sx^2 + S.P.x - P)$$

**Division Algorithm for Polynomials**

$$:- \quad \frac{q(x)}{g(x) \sqrt{p(x)}}$$

$$p(x) = g(x) \times q(x) + r(x)$$