

## Degree of Polynomial.

The degree of a polynomial is the highest degree of its individual terms with non-zero coefficients. The degree of a term is the sum of the exponents of the variables that appear in it.

For Example: The degree of  $p(x) = x^5 - x^3 + 7$  is 5.

**Note:** The degree of a non-zero constant polynomial is zero.

### Linear polynomial:

A polynomial of degree one is called a linear polynomial.

For Example:  $2x - 7$ ,  $s + 5$ , etc. are some linear polynomials.

### Quadratic polynomial:

A polynomial having highest degree of two is called a quadratic polynomial. In general, a quadratic polynomial can be expressed in the form  $ax^2 + bx + c$ , where  $a \neq 0$  and  $a, b, c$  are constants.

For Example:  $x^2 - 9$ ,  $a^2 + 7$ , etc. are some quadratic polynomials.

### Cubic polynomial:

A polynomial having highest degree of three is called a cubic polynomial. In general, a quadratic polynomial can be expressed in the form  $ax^3 + bx^2 + cx + d$ , where  $a \neq 0$  and  $a, b, c, d$  are constants.

For Example:  $x^3 - 9x + 2$ ,  $a^3 + a^2 + a + 7$ , etc. are some cubic polynomials.

### General expression of polynomial:

A polynomial in one variable  $x$  of degree  $n$  can be expressed as  $a_n x^n + a_{n-1} x^{n-1} + \dots + a_1 x + a_0$ , where  $a_n \neq 0$  and  $a_0, a_1, \dots, a_n$  are constants.

**Examples:**

1. Degree of the polynomial  $7x^5 + 8x^2 - 5x + 3$  is:
2. Degree of polynomial  $\sqrt{3}$  is:
3. Degree of the polynomial  $25x^2 - 35x + 12 = 25x^2 - 3x + 1$