Polynomial

Polynomial is an algebraic expression which includes constants, variables and exponents. It is the expression in which the variables have only positive integral powers.

Example

1. $4x^3 + 3x^2 + x + 3$ is a polynomial in variable x.

2. $4x^2 + 3x^{-1} - 4$ is not a polynomial as it has negative power.

3. $3x^{3/2} + 2x - 3$ is not a polynomial.

Denoting Polynomials in One Variable:

Let us take an example to understand it:
If the variable in a polynomial is x, then we can denote the polynomial by p(x) or q(x) etc.

Ex: p(x) = 2x + 3

P(a) = $2a^2 + 3a + 5$

Polynomials in One Variable: The expression which contains only one type of variable in entire expression is called a polynomial in one variable.
For example: 2x, $a^2 + 2a + 5$, etc. are polynomials in one variable.

Types of Polynomials

Based on the number of terms a polynomial can be classified into monomial, binomial, trinomial, etc.

Monomial: An algebraic expression having only one term is called a monomial. P(x) = x is a monomial.

For Example: p(x) = 3x, $q(a) = 2a^2$, etc. are some monomials

Binomial: Polynomials having two terms are called binomials. $P(x) = x^2 + 2x$ has two terms, x^2 and 2x. So, it is a binomial.

For example: r(x) = x + 10, $c(z) = 7z^2 + z$ etc. are some binomials

Trinomial: Polynomials having three terms are called trinomials. $P(x) = x^4 + 3x^2 - 4$ has three terms, x^4, $3x^2$ and -4. So, it is a trinomial.

For example: $p(x) = 7x^2 + x + 7$, $d(t) = t^3 - 3t + 4$, etc. are some trinomials

Constant Polynomial: An algebraic expression of the form $P(x) = c$, where c is a constant is called constant polynomial. The constant polynomial 0 is called the zero polynomial.

Examples

1.Give an example of a monomial and a binomial having degrees as 22 and 49, respectively.

2.Give an example of Monomial, Binomial and Trinomial with degree 7.