

1. Polynomials are represented as $\sum_{m=0}^n a_m x^m$
2. Exponents of the terms of a polynomial can only be natural numbers $\{0,1,2,3,\dots\}$
3. Degree of a term in a polynomial is the sum of exponents of variables in that term. Degree of a polynomial is the largest degree of its terms, with non-zero coefficients.
4. Degree of a zero polynomial is undefined.
5. Polynomial with degree 0 are called constants, those with degree 1 are called linear, those with degree 2 are called quadratic, those with degree 3 are called cubic, and those with degree 4 are called quartic polynomials.
6. Domain of a polynomial comprises of all reals, and range depends on the function.
7. During addition of polynomials, add all terms with equal exponents.
8. Each term in the product of two polynomials is $\sum_{j=0}^k a_j b_{k-j}$, where k represents the exponent of each term in the product. Coefficient of the j^{th} term is $a_j b_{k-j}$
9. Degree of the product of two polynomials is $m + n$, where m is the degree of the first polynomial and n is the degree of the second polynomial.
10. In order to divide a polynomial with another, degree of the numerator must be more than the denominator. Remainder of the division will result in a polynomial whose degree is lesser than the denominator – could be a constant or a zero polynomial too.