**Constant:** a number

**Monomial:** a constant, variable or a product of constants and variables

**Coefficient:** the constant factor of a monomial.

**Degree of a variable:** the number of times a variable occurs in a monomial.

**Degree of a monomial:** the sum of the degrees of the variables in a monomial.

**Like Terms (similar monomials):** monomials that only differ by their numerical coefficients.

**Polynomial:** a monomial or sum of monomials (each monomial is called a term)

**Simplified polynomial:** a polynomial in which no two terms are like terms usually arranged in decreasing degree of one of the variables.
Degree of a polynomial: found by simplifying the polynomial and taking the degree from the term with the largest degree.

Ex 1) Simplify and arrange in descending degrees of x.

1a) \( x + 5x^2 - 6 - 2x^3 + 3 - 4x \)
\[ 3x^2 - 3x - 3 \]

1b) \( x^3y^3 - 7xy^6 + x^2y^2 + 3xy^6 - xy^6 \)
\[ x^3y^3 + x^2y^2 - 5xy^6 \]

Ex 2) Add \(-3x^3 + 2x - 4\) and \(4x^3 + 3x^2 + 2\)

\[ (-3x^3 + 2x - 4) + (4x^3 + 3x^2 + 2) \]
\[ x^3 + 3x^2 + 2x - 2 \]
Ex 3) Subtract the following polynomials:

\((-x^3 + 3x^2 - 2x + 2) - (-x^3 + 5x^2 - 8x + 4)\)

Instead of subtracting, try adding the opposite of the second polynomial.

\((-x^3 + 3x^2 - 2x + 2) + (x^3 + 5x^2 - 8x + 4)\)

\(-2x^2 + 6x - 2\)