

13.1 – Polynomial Functions

Polynomial Example	Degree	Name Using Degree	Number of Terms	Name Using Number of Terms
6	0	Constant	1	Monomial
$x + 3$	1	Linear	2	Binomial
$3x^2 - 4x + 8$	2	Quadratic	3	Trinomial
$2x^3 - 5x^2 - 2x + 3$	3	Cubic	4	Polynomial of 4 Terms
$x^4 - 3x^3 + x^2 - 5x + 6$	4	Quartic	5	Polynomial of 5 Terms
$x^5 + 9$	5	Quintic	2	Binomial

*Standard Form of a polynomial is written in descending order by degree.

Examples:

Write each polynomial in standard form. Then, classify it by degree and by number of terms.

1. $-7x + 5x^4$

Standard Form: $5x^4 - 7$

Name: Quartic Binomial

2. $-2x^5$

Standard Form: $-2x^5$

Name: Quintic Monomial

Sometimes like terms will need to be combined before the polynomial can be written in Standard Form. Like terms must have the same variable with the same exponent.

3. $x^2 - 4x + 3x^2 + 2x$

Standard Form: $4x^2 - 2x$

Name: Quadratic Binomial

4. $4x - 6x + 5$

Standard Form: $-2x + 5$

Name: Linear Binomial

5. $3x^3 + x^2 - 4x + 2x^3$

Standard Form: $5x^3 + x^2 - 4x$

Name: Cubic Trinomial

6. $-3x^4 - 4x + 7x^4 + x - 2x^2 + 8$

Standard Form: $4x^4 - 2x^2 - 3x + 8$

Name: Quartic 4 Term