1.1 Introduction to Polynomials

Old Types of Functions

① $y = 5x - 10$

- Linear Function
- Graphically is a line

② $y = 2^x - 10$

- Exponential Function
- Graphically is a curve

new Polynomial Operations

- Poly = many -nomial = terms

What is a Polynomial?

- An expression (or string of terms) that can have constants & variables with whole number (positive) exponents.

Example) $5x^2 - 3y + 10$
$-2y^3 - 9$

Nonexamples) $x + y^{-2}$
$5x^{\frac{1}{2}} - \frac{2}{x}$

- Polynomials are named according to their degree & number of terms.

Degree The highest exponent of a polynomial.

Degree	Name	Example
0	Constant	3
1	Linear	$2x + 8$
2	Quadratic	$3x^2 + 2x - 5$
3	Cubic	$10x^3$
4	Quartic	$6x^4 - 8x^2$
5	Quintic	$-2x^5 + x^3 + x$
6+	6th Degree, etc.	$4x^6 + 7x^4 + 8$

Number of Terms A string of expressions separated by plus, minus signs.

Terms	Name	Example
1	Monomial	$3x$
2	Binomial	$2y + 8$
3	Trinomial	$8x^2 + 5x - 2$
4	Polynomial	$6x^5 - 7x^4 + 4x - 1$

[Example 1] Name the Polynomials.

1. $-7+3n^3$ Cubic Binomial
2. $5n$ Linear Monomial
3. $-x^4+3x^2-11$ Quartic Trinomial