

9 – 1: Adding/Subtracting Polynomials

Objectives

NCSCOS – 1.01 - Describe polynomials - Add/subtract polynomials

I. Description of Polynomials

- **monomial** → an expression that is a _____, a _____, or a _____ of a number and one or more variables.

Ex: _____, _____, _____

- **degree of a monomial** → the _____ of the _____ of its variables.

Example 1: Find the degree of each monomial.

(a) $\frac{1}{2}x$ → Degree: _____

(b) $3x^2$ → Degree: _____

(c) $7x^2y^3$ → Degree: _____

(d) -5 → Degree: _____

(e) 0 → Degree: _____

(f) $5x^0$ → Degree: _____

- **polynomial** → a _____ or the sum or difference of _____ or more monomials.

Ex: $3x^4 - 2x^3 + x^2 - 1$

- **standard form of a polynomial** → a form of a polynomial where the degrees of its monomial terms _____ from _____ to _____.

Example 2: Are these polynomials in standard form? Yes or No.

(a) $9x^3 - 5x^2 - 3x + 4$ → _____ (b) $6x^2 + 8$ → _____ (c) $2x^4 + 3x^2 - x^3 + 4x - 1$ → _____

- **degree of a polynomial** → the _____ exponent or sum of exponents in its monomials.

Example 3: State the degree of each polynomial.

(a) $x + 1$ → Degree: _____ (b) $2x + x^2 - 3$ → Degree: _____ (c) $2xy - 3x^2y + x$ → Degree: _____

Classification of Polynomials Chart

Polynomial	Degree	Name using Degree	Number of Terms	Name using Number of Terms
1.) $5x + 4$				
2.) $2x^2 + 3x - 5$				
3.) $6x^3$				
4.) $9x^4 - 3x^3 - x + 2$				
5.) 8				

Example 4: Write each polynomial in standard form. Then name each polynomial based on its degree and number of terms.

(a) $5 + 2x \rightarrow$ _____ name: _____

(b) $3x^6 - 4 + 2x^2 + 5x^3 \rightarrow$ _____ name: _____

II. Adding and Subtracting Polynomials

- when adding polynomials \rightarrow add _____ terms

- when subtracting polynomials \rightarrow change _____ on the subtracted polynomial (using the distributive property) and then combine _____ terms

Example 5: Simplify.

(a) $(4x^2 + 6x + 7) + (2x^2 - 9x + 1) =$ _____

(b) $(2x^3 + 5x^2 - 3x) - (x^3 - 8x^2 + 11) =$ _____
= _____