TOPIC: INTRO TO POLYNOMIALS

- **Polynomial:** Algebraic expression where variables have only _____ number exponents (*no negatives, no fractions*)
  - **Monomial:** _____ term(s)
  - **Binomial:** _____ term(s)
  - **Trinomial:** _____ term(s)

$$6x^3 + 3x^2 + 5x$$

EXAMPLE: Determine if the expression is a polynomial. If so, identify if it's a monomial, binomial, trinomial, or none.

(A) $\frac{3}{4}x + x^3$

Whole number exp? ☐
Number of terms? ___

[MONOMIAL / BINOMIAL / TRINOMIAL / NONE]

(B) $\frac{5}{y}$

Whole number exp? ☐
Number of terms? ___

[MONOMIAL / BINOMIAL / TRINOMIAL / NONE]

(C) $2x^3y^2$

Whole number exp? ☐
Number of terms? ___

[MONOMIAL / BINOMIAL / TRINOMIAL / NONE]

Writing Polynomials in Standard Form

- **Standard Form:** Terms written in _____ order of exponents & all _____ terms combined
  - **Degree:** _____ exponent of variable in polynomial

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

_____ Coefficient Coefficients Constant

EXAMPLE: Write each polynomial in standard form. Identify the degree & leading coefficient.

(A) $\frac{1}{2}x + x^3$

Descending order? ☐
Like terms combined? ☐
Degree: _____
Leading Coefficient: _____

(B) $5x - 3x^2 + 2x - 7 + x^2$

Descending order? ☐
Like terms combined? ☐
Degree: _____
Leading Coefficient: _____

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Adding & Subtracting Polynomials

Algebraic Expressions

$(2x + 3) + (4x + 8)$

$6x + 11$

- Like algebraic expressions, add/subtract polynomials by _____ like terms.

EXAMPLE: Perform the given operation and simplify.

Adding Polynomials	Subtracting Polynomials
$(5x^2 + 2x + 3) + (x^2 + 7x + 8)$	$(3x^2 + 2x + 4) - (5x + 10 - x^2)$

Caution!
Remember to distribute signs into parentheses!

PRACTICE: Perform the indicated operation.

$$(x^3 + 3x^2 - 7x) + 2(x^3 - 5x^2 + 9x + 4)$$

PRACTICE: Perform the indicated operation.

$$(-2x^4 + 10x^3 + 6x - 3) - (x^4 - 7x^2 + 8x + 5)$$