**I.** What is a term? \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Monomial: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Binomial: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Trinomial: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Polynomial: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

**II.** Adding and Subtracting Polynomials: must have \_\_\_\_\_\_\_\_\_\_\_ \_\_\_\_\_\_\_\_\_\_\_\_.

Like terms must have the same \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ and the same \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Add or subtract only the coefficients, \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

All Polynomials must be in descending order, \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

**Hint:** might want to stack the like terms then add

**EXAMPLE:** ( 5x2 – 3x + 1 ) + ( 2x2 + 7x – 3 )

**EXAMPLE:** ( 3y2 + 7y – 3 ) + ( 4y2 + 1 )

**EXAMPLE:** ( 7x + 4 ) – ( 2x + 1 )

**EXAMPLE:** ( 8y2 + y – 11 ) – ( 3 + 6y3 – 8y2 )

**EXAMPLE:** 5( 2x2 – 3x + 7 ) – 2( 6x2 – x + 12 )

**III.** Multiplying Polynomials: use \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Use the exponent rule, *Product Rule*: when you multiply like bases, you add exponents.

**Multiply and distribute (multiply all terms inside parentheses):**

**EXAMPLE:** 5x2 ( 2x2 – 5x – 1 )

**EXAMPLE:** -3x2 ( 7x3 – 4x2 + 4x )

**Multiply and FOIL:**

FOIL is the same as distributive property only you distribute more than one time before combining like terms. FOIL is used for multiplying binomials.

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**EXAMPLE:** (2x + 4) (3x – 5)

**EXAMPLE:** (6m + 1) (4m – 3)

**EXAMPLE:** (3p + 11) (3p – 11) special case called \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

**EXAMPLE:** (9y – 2) (9y + 2)

**Squaring a binomial. Squaring means two. Write it two times and FOIL**

**EXAMPLE:** (x + 7)2 the trinomial is called a \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

**EXAMPLE:** (6a – 5)2

**IV.** The opposite of multiplying is \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

The opposite of multiplying polynomials is \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Use the exponent rule, *Quotient Rule*: when you divide like bases, you subtract exponents.

Factoring the **Greatest Common Factor** (GCF) is the opposite of the distributive property:

\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

**EXAMPLE:** 18a6 – 12a4

**EXAMPLE:** 8x – 24

**EXAMPLE:** 6x2y + 8xy + 12y

Factoring **Trinomials**, 1x2 + bx + c, is the opposite of FOIL: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

**EXAMPLE:** x2 + 8x + 12

**EXAMPLE:** x2 – 5x + 6

**EXAMPLE:** x2 + 2x – 35

**EXAMPLE:** x2 – 14x + 49 \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

**EXAMPLE:** 36a2 + 60a + 25

**EXAMPLE:** x2 – 36 \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

**EXAMPLE:** 4x2 – 49