**Algebra 1 - Unit 8: Polynomials Name\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_**

**10.1 - Adding and Subtracting Polynomials**

**Definitions**

A **Polynomial** is an expression that is the sum of the form , where k is nonnegative integer.

Examples:

The **Standard Form** of a polynomial is \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_.

Examples:

The **degree** is the \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ of the variable.

Examples:

The **Degree of a Polynomial** is the \_\_\_\_\_\_\_\_\_\_\_\_ degree of its terms.

Examples:

A **Coefficient** is the \_\_\_\_\_\_\_\_\_\_\_\_ in a term that is the product of a number and a variable.

Examples:

The **Leading Coefficient** is the coefficient of the \_\_\_\_\_\_\_\_\_\_\_\_ term in a polynomial that is written in standard from.

Examples:

**Adding polynomials:**



**Subtracting polynomials:**

1. (

**10.2 - Multiplying Polynomials**

**Distribution:**

Distribution is one of the methods that allow us to multiply polynomials. Distribution is simplest when a polynomial is multiplied by a monomial:



We can use distribution to multiply two binomials by using distribution \_\_\_\_\_\_\_\_\_



After we distribute we must always ­­­\_\_\_\_\_\_\_\_\_\_\_\_\_ by combining \_\_\_\_\_\_\_\_\_\_\_\_\_

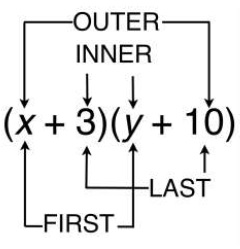
Distribution is also the most effective way to multiply larger polynomials



*Multiply the following polynomials using distribution*

**FOIL:** When we are multiplying two binomials (which are polynomials with two terms) we can use the FOIL method, FOIL stands for:

F:\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ 0: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ I:\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ L:\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

To use this method, calculate the produces of the first, inner, outer and last terms; then add.



The product of the **F**irst terms is \_\_\_\_\_\_\_

The product of the **I**nner terms is \_\_\_\_\_\_\_

The product of the **O**uter terms is\_\_\_\_\_\_\_

The product of the **L**ast terms is \_\_\_\_\_\_

The sum of the first, inner, outer and last terms is: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

*Multiply the following polynomials using the FOIL method*

5. =

6. 

7. 

**10.3 – Special Product Patterns**

**Special Product Patters**

**Sum and Difference Pattern**

Examples:

**Square of a Binomial Pattern**

Examples:

**Practice:**