**Algebra 2 – Polynomials (vocabulary, and + & -) Name: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_**

**Terms: numbers or variables that are being added or subtracted together:**

1.  How many terms? \_\_\_\_\_\_\_\_\_
2.  How many terms? \_\_\_\_\_\_\_\_\_
3.  How many terms? \_\_\_\_\_\_\_\_\_
4. 9 How many terms? \_\_\_\_\_\_\_\_\_

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1. Mono is a prefix meaning \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_.
2. Monomial - \_\_\_\_\_\_\_\_\_\_\_\_\_ term.
3. Bi is a prefix meaning \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_.
4. Bi - \_\_\_\_\_\_\_\_\_\_\_\_\_ terms.
5. Tri is a prefix meaning \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_.
6. Tri - \_\_\_\_\_\_\_\_\_\_\_\_\_ terms.
7. Poly is a prefix that means \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_. (think polygon)
8. Polynomial - \_\_\_\_\_\_\_\_\_\_\_\_\_ terms.
9. **Compare and Contrast: Write in your own words, how monomials and polynomials are the same and how they**

**are different (you may use examples in your explanation): \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_**

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**DEGREE (MONOMIAL): You can determine the degree of a monomial by adding all the exponents of the variables.**
**For example:**  has a degree of 6 (2 + 1 + 3 = 6)

1. \_\_\_\_\_\_\_\_\_ What is the degree of: ? How did you arrive at that answer: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
2. \_\_\_\_\_\_\_\_\_ What is the degree of: ?
3. \_\_\_\_\_\_\_\_\_ What is the degree of: ?

**DEGREE (POLYNOMIAL): Is given by the term with the greatest degree.**
**For example:**  has a degree of 3 (because 3 is the largest degree)

1. \_\_\_\_\_\_\_\_\_ What is the degree of: ?
2. \_\_\_\_\_\_\_\_\_ What is the degree of: ?
3. \_\_\_\_\_\_\_\_\_ What is the degree of: ?
4. \_\_\_\_\_\_\_\_\_ What is the degree of: ? How did you arrive at that answer: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

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

**Coefficient: Fancy word for the number it is being multiplied by.**

**Example**: 
The coefficient of is 4. The coefficient of is -1. The coefficient of is 5. The coefficient of is 1.

1. **Fill in the blanks:** 

The coefficient of is \_\_\_\_\_. The coefficient of is \_\_\_\_\_. The coefficient of is\_\_\_\_\_. The coefficient of is \_\_\_\_\_. The coefficient of is \_\_\_\_\_. (add the blanks together, they should total -1 if you did it correctly)

1. **Fill in the blanks:** 

The coefficient of is \_\_\_\_\_. The coefficient of is \_\_\_\_\_. The coefficient of is\_\_\_\_\_. The coefficient of is \_\_\_\_\_. The coefficient of is \_\_\_\_\_. (add the blanks together, they should total 21 if you did it correctly)

**Standard Form: Putting the terms of polynomial in order from largest degree to smallest. (Constant last)**

**Example**:  in standard form would be  because 3 is the largest degree so it is written first, 2 in the next largest degree so it is written next, 1 is the next biggest degree so it is written next, 0 is the smallest degree (the constant) so it goes last.

1.  in standard form would be: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
2.  in standard form would be: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
3.  in standard form would be: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

**Leading Coefficient: If a polynomial is written in standard form, the leading coefficient is the coefficient of the first term.**

**Example**:  in standard form would be . The coefficient of the first term is 5. So the leading coefficient of  is 5.

1. \_\_\_\_\_\_\_\_\_\_\_\_\_\_What would be the leading coefficient of ?
2. \_\_\_\_\_\_\_\_\_\_\_\_\_\_What would be the leading coefficient of ?
3. \_\_\_\_\_\_\_\_\_\_\_\_\_\_What would be the leading coefficient of ?

**Adding and Subtracting Polynomials:**

1. **To add or subtract polynomials from each other, start by putting parenthesis around each polynomial:**

**If** , , and  and I wanted to find :

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1. **Next, distribute to remove the parenthesis (note, distributing 1 doesn’t change anything, but distributing -1 changes the signs:**

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1. **Combine like terms:** 
2. **Write in Standard Form:** 

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**If** , , and 

1. Find  (put your answer in standard form): \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Show work below:

1. Find  (put your answer in standard form): \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Show work below:

1. Find  (put your answer in standard form): \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Show work below:

1. Cardiac output is the amount of blood pumped through the heart. The output is measured by a technique called dye dilution. A doctor injects dye into a vein near the heart and measures the amount of dye in the arteries over time. The cardiac output of a particular patient can be approximated by the function

 where t represents time
(in seconds after injection, 0 ≤t≤ 23) and f (t) represents the concentration of dye (in milligrams per liter).

1. Evaluate f(t) for t= 0 and t= 3
2. Describe what the values of the function from part a represent.