Name _____

Polynomials and Polynomial Functions Vocabulary

Match each key term to its corresponding definition.

a. polynomial   **e.** monomial
b. term   **f.** binomial
c. coefficient   **g.** trinomial
d. degree   **h.** standard form

1. A polynomial written with the terms in descending order, starting with the term with the greatest degree and ending with the term with the least degree.

2. In a polynomial in one variable, it is the exponent of that variable with the largest numerical value.

3. An expression that consists of a single term that is either a constant, a variable, or a product of a constant and one or more variables. It is a polynomial with one term.

4. A polynomial with exactly two terms.

5. The number multiplying one or more variables in a term.

6. The parts of a polynomial that are added. They may be a number, a variable, or a product of a number and a variable (or variables).

7. An expression of the form $a_0 + a_1 x + a_2 x^2 + ... + a_n x^n$, where the coefficients ($a_0, a_1, a_2, , . . .$) are real numbers or complex numbers and the exponents are non-negative integers.

8. A polynomial that consists of three terms.

Name the terms and coefficients of each polynomial

10. $3x + 9$

11. $10a^3 - 8a + 5$

12. $24x$

Classify each polynomial by the number of terms

13. $6x^2 + x + 9$

14. $-10x$

15. $3x + 5$

Classify each polynomial by its degree.

16. $y - 4$

17. $3y^2 + 6y + 9$

18. 30

Rewrite each polynomial in Standard Form.

19. $10 + 3x^2 + 18x$

20. $20x + 6 + 2x^2$

21. $72 + 9x^2 + 81x - 3x^3$

Adding and Subtracting Polynomials
Vocabulary

Write the term from the box that best completes each statement.

Add	combining like terms	subtract	distributive property

1. To find the sum of two polynomials, you must_____ each group of like terms.

2. You can add or subtract polynomials by_____ . For example, to find the sum of $3x^2 + 5x + 6$ and $8x + 5x^2$, you would add $(3x^2 + 5x^2) + (5x + 8x) + 6$.

3. If you are subtracting one function from another function, you must_____ each term of the second function from the first function.

4. To combine like terms, you can use the_____ . For example, $5y + 3y = y(5 + 3) = y(8) = 8y$.

Problem Set

Simplify each expression by calculating the sum or difference. Express all answers in Standard Form

5. $3x + 7x$

6. $31x^2 + 9x^2 - 3x^2$

7. $x^5 - 8x^5$

8. $(8x + 4) + (5x + 3)$

9. $(28x - 7) - (14x + 6)$

10. $(16x - 6) + (19 + 2x)$

11. $(21x^2 - 6x + 14) + (-x^2 - 3x + 18)$

12. $(6x + 5) - (12x - 6)$

13. $(3x^2 - 8x + 24) - (9x^2 + 21x + 12)$

14. $(8x^3 + 3x - 2) + (-x^2 - 9x + 10)$

15. $(-6x^3 - x^2 + x) + (4x^3 - 4x^2 + 16)$

16. $(6x^2 - 3x^3 + 3x) - (10x - 2x^3 + 6)$