

## Adding and Subtracting Polynomials

**Vocabulary: Match each definition with its corresponding term.**

- |                                 |  |
|---------------------------------|--|
| _____ 1) polynomial             | a. a polynomial with only 1 term   |
| _____ 2) term                   | b. the degree of the term with the greatest exponent   |
| _____ 3) coefficient            | c. a mathematical expression involving the sum of powers in one or more variables multiplied by coefficients |
| _____ 4) monomial               | d. a polynomial with exactly 3 terms   |
| _____ 5) binomial               | e. any number being multiplied by a power within a polynomial expression                                     |
| _____ 6) trinomial              | f. each product in a polynomial expression   |
| _____ 7) degree of a term       | g. a polynomial with exactly 2 terms   |
| _____ 8) degree of a polynomial | h. the exponent of a term in a polynomial  |

**Identify the terms and coefficients in each expression.**

1)  $5x + 8$

2)  $-24$

3)  $-3x^2 + 4x - 3$

4)  $4 - 9x$

**Determine whether each expression is a polynomial. If the expression is not a polynomial, explain why it is not.**

5)  $\frac{x}{7} + 10$

6)  $\frac{4}{5}m - \frac{1}{5}$

7)  $\frac{3}{x} - 8x$

8)  $-2w^3 + w^2 - 5$

9)  $\sqrt[3]{x} + 12$

10)  $9 + 12x$

**Determine whether each polynomial is a monomial, binomial, or trinomial. State the degree of the polynomial.**

11)  $8x + 3$

12)  $5m^2$

13)  $x^2 - 7x$

14)  $-9n^4 + 6n^2 - 1$

15)  $-12$

16)  $4 - 10x^3 + 8x$

Write each polynomial in standard form. Classify the polynomial by its number of terms and by its degree.

17)  $2x + 6x^2$

18)  $-9m^2 + 4m^3$

19)  $10 - 5x$

20)  $7x - 3 + 12x^2$

21)  $-6t^2 + 4t + 3t^3$

22)  $-1 - p^4$

**Adding and Subtracting Polynomials: Simplify each expression.**

23)  $(5x - 8) + (7x + 10)$

24)  $(4m^2 + 9m) - (2m^2 + 6)$

25)  $(-x^2 + 5x - 12) + (2x^2 - 6)$

26)  $(10t^2 - 3t + 9) + (6t^2 + 7t)$

27)  $(-5w^2 + 3w - 8) + (15w^2 - 4w + 11)$

28)  $(3x^3 + 10x - 1) - (5x^2 + 10x - 9)$

29)  $(-a^2 - 2a - 8) + (2a^2 - 9a + 15)$

30)  $(14p^4 + 7p^2) + (8p^3 + 7p^2 - p)$