CLC CENTRAL LAKES COLLEGE

The Vocabulary of Polynomials (in one variable)

Word & Definition

- **Constant:** A fixed real number
- **Variable:** A letter used to represent a changeable number
- **Term:** A constant standing alone or a constant multiplied by a variable raised to a whole number power
- **Monomial:** A single term
- **Binomial:** A sum of two terms that cannot be combined
- **Trinomial:** A sum of three terms that cannot be combined
- **Polynomial:** A sum of any number of terms
- **Coefficient:** The constant number factor of a term
- **Degree (of a term):** The whole number exponent on the variable in a term
- **Degree (of the polynomial):** The greatest degree of any term in the polynomial

Combining Like Terms

Polynomial terms can only be added when they are "like terms": they have the same variable raised to the same power. Consider these pairs of terms.

Terms & Like or Unlike?

- $8x^2, 5x^2$: Like terms; the variable x is raised to the second power in both
- $9y^3, 4y$: Unlike terms; the variable y has different powers
- $-23x, 7y$: Unlike terms; the variable y has different powers
- $\frac{3}{4}z^5, -6.5z^5$: Like terms; the variable z is raised to the fifth power in both

To combine like terms, add the coefficients. Keep the exponent on the variable the same as in each of the original terms. For example

- $8x^2 + 5x^2 = (8 + 5)x^2 = 13x^2$
- $\frac{3}{4}z^5 - z^5 = \left(\frac{3}{4} - 1\right)z^5 = -\frac{1}{4}z^5$

For more practice, see Add and Subtract Polynomials. Then answer the following questions.

1. What is the degree of the polynomial $4y^5 - 2y^7 + 8y$?
2. **Add** $(x^3 + 7x^2 - 5x - 16) + (4x^3 - 3x^2 - 7x + 13)$