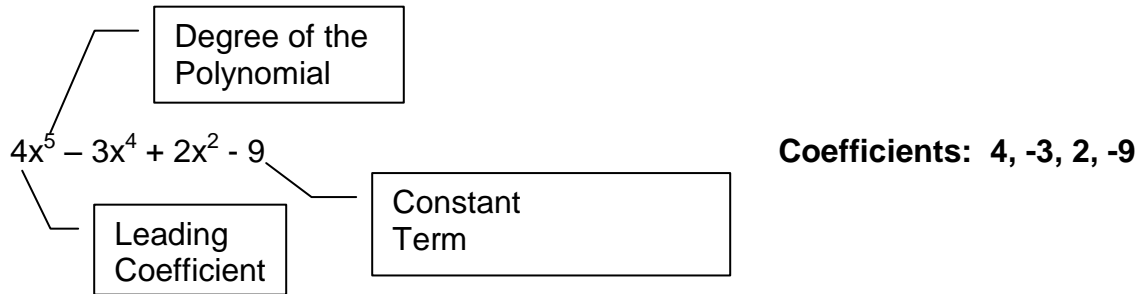


4.3, 4.4 & 4.7: Polynomials/Adding & Subtracting



Vocabulary:

Terms: Constants, variables, or products of constants and/or variables
Terms are separated by plus or minus signs

Like terms: Terms with the same variable(s) to the same power

Descending order: Terms arranged from highest to lowest power

Monomial: Polynomial with one term: $5x^3$

Binomial: Polynomial with two terms: $-7x + 2$

Trinomial: Polynomial with three terms: $5x^2 - 3x + 1$

Polynomial: General name for the sum or difference of monomials (terms) – includes monomials, binomials, trinomials and polynomials with more than three terms:
 $4x^5 - 3x^4 + 2x^2 - 9$

- I. a. Put in descending order.
- b. Identify as a binomial, trinomial, or polynomial (if not binomial or trinomial)
- c. Identify coefficients.
- d. Give the degree of the polynomial.

1. $4x^3 - 6x^5 + 2x$

2. $8x^4 - 3x^2$

3. $5 - 2x^5 + 3x^2 - 7x^4$

II. Combine Like Terms. Write answers in descending order.

1. $6m + 5m^2 - m + m^2$

2. $-5m^3 + m^2 - 6m - m^3 + 3m^2 + 2m$

3. $4y - 3y^3 + y + 2y^3$

Combine Like Terms:

1. $7xy - 3x^2y + 4xy + x^2y$

2. $6x^2y + xy^2 - 6x^2y + xy^2$

III. Add or Subtract Polynomials - Combine Like Terms: You may only combine--add or subtract--like terms (constants or terms that have the same variables raised to the same powers). Remember to distribute a number or a negative sign in front of parentheses: $-(2x - 4) = -2x + 4$

1. $(6w + 2) + (2w - 8)$

2. $5x^2 + 3x - (x^2 + x)$

3. $(4m^3 + m^2) - (4m^3 - m^2)$

4. $(3x^4y - x^3y + 2xy) + (-x^4y + 9x^3y + 5xy)$

5. $(x^2y - 2xy^2 + 3x^3) - (3xy^2 + 4x^2y - x^3)$

YOU TRY: Perform the indicated operation and simplify your answer. If only one variable, write answer in descending order.

1. $5xy^2 - 6x^2y - xy^2 + 4x^2y$

2. $7b - (5 - 7b)$

3. $(7x^3 - 4x^2 - 8) + (x^2 + 5)$

4. $(2x^2y - xy^2 + 3x^3) - (3xy^2 - 2x^2y - 4x^3)$

5. $-(3x^3 - 2x^2 + 7)$