

Adding and Subtracting Polynomials p.75

Coefficient: coefficient is the number in front of the variable.

Example: $2x^4$; the coefficient is two.

You can only add or subtract like terms. Like terms mean they will need to have the SAME variable and exponent.

Example: $(3x^2, 5x^2)$ are like terms

When you add or subtract like terms, you are adding or subtracting the coefficients. The variable and exponents stay the same.

Example: $3x^2 + 5x^2 = 8x^2$; $5x^2 - 3x^2 = 2x^2$

If you have a subtraction sign followed by a set of parenthesis, you have to change the sign of everything in that second set of parenthesis before combining like terms.

Example: $(3x^4 + 2x) - (5x + 8)$; rewrite the algebraic expression in parenthesis behind the subtraction symbol with its new sign.

$3x^4 + 2x - 5x - 8$: the positive $5x$ is now a negative $5x$. The positive 8 is now a negative 8 .

Adding polynomials: You combine like terms and then write in standard form.

Example: $(-7x^4 + 4x + 5x^2) + (3x^4 - 5x^3 - 2x^2)$

Answer: $-4x^4 - 5x^3 + 3x^2 + 4x$

Subtracting Polynomials: You change signs if needed, combine like terms, and then write in standard form.

Example: $(-7x^4 + 4x + 5x^2) - (3x^4 - 5x^3 - 2x^2)$

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

Answer: $-10x^4 + 5x^3 + 7x^2 + 4x$