

Section Overview

Adding and Subtracting Polynomials

Lessons 12-3, 12-4

Why? Sums and differences of polynomials can be used to represent real-world measurements such as perimeters.

Adding Polynomials	Subtracting Polynomials
To add polynomials, combine like terms.	To subtract polynomials, add the opposite.
$\begin{array}{r} 3a^2b^2 + 2a^2 - 5ab \\ a^2 - 3ab - 2 \\ + 6ab + 1 \\ \hline 3a^2b^2 + 3a^2 - 2ab - 1 \end{array}$	$\begin{array}{r} (3x^2y^2 + xy - 5x) \\ - (6x + 4xy - 5) \\ \hline 3x^2y^2 + xy - 5x \\ - 4xy - 6x + 5 \\ \hline 3x^2y^2 - 3xy - 11x + 5 \end{array}$

Multiplying Polynomials

Lessons 12-5, 12-6

Why? Products of polynomials can be used to represent real-world measurements such as areas.

Multiplying Polynomials		
To multiply two monomials, multiply the coefficients and add the exponents of the variables that are the same. $\begin{array}{l} (5m^2n^3)(6m^3n^6) \\ 5 \cdot 6 \cdot m^{(2+3)}n^{(3+6)} \\ 30m^5n^9 \end{array}$	To multiply a polynomial by a monomial, use the Distributive Property. $\begin{array}{l} -4a^2b(2a^4b^3 + 5a^2b^3) \\ -8a^6b^4 - 20a^4b^4 \end{array}$	To multiply two binomials, use the FOIL method. $\begin{array}{c} (x + y)(x + z) \\ x^2 + xz + yx + yz \\ \begin{array}{cccc} \text{First} & \text{Outer} & \text{Inner} & \text{Last} \\ \text{terms} & \text{terms} & \text{terms} & \text{terms} \end{array} \end{array}$