4.6 Multivariable Polynomials

Need To Know

- Evaluating a Polynomial
- Like Terms and Degree
- Addition and Subtraction of Polynomials
- Multiplication of Polynomials

Evaluating Polynomials

Find the value of $2x^2 – xy + 3y^2$ for $x = -2$ & $y = 4$

Evaluating Polynomials

An amount of money P invested at a yearly rate r for t years will grow to an amount of A given by $A = P(1 + r)^t$. What will you have from investing $1000 at 6% for 3 years?

New Vocabulary

Definition– The **degree of a term** is the number of variable factors in the term. The **degree of a polynomial** is the degree of the leading term, and the leading term is the term with the highest degree.

$$6 - xy + 3x^2y^2 - 2x^3yz^2 + y^5$$

Term	Coefficient	Degree	Deg of Poly

Add and Subtract Polynomials

Simplify:

$(2x^2 - 3xy + y^2) + (-4x^2 - 6xy - y^2) + (4x^2 + xy - y^2)$

$(A^3 - B^3) - (-2A^3 + A^2B - AB^2 - 3B^3)$

Multiplying Polynomials

Multiply:

$(a + b + c)(a + b - c)$

FOILing Polynomials

Multiply:

$(5x + 3y)(2x - 3y)$

$(4r + 3t)^2$

$(p^3 - 5q)(p^3 + 5q)$

end