

Multiplying and Factoring Guide Notes

Multiplication of Algebraic Expression:

Monomials by Monomial. to multiply monomials, use the commutative and associative rules for multiplication and in most cases, the theorem of exponents.

Monomial by a Polynomial. if a polynomial is to be multiplied by a monomial, the distributive rule is used. the product is the sum of all the products formed by multiplying each term polynomial by the monomial multiplier.

Sample Problem 1: Find the product of the following monomials

1. $(3x^2y)(4xy^3)$

2. $(xy^2z^3)(2xy^5)$

3. $(3a)(21b^2c)$

Sample Problem 2: Find the product of the monomial by polynomials

4. $3x(4x + 2)$

5. $3a(2a^2 + 4b)$

6. $5x(x^2 + 3x - 4)$

7. $6ab(2a + 3b - 4c + 5)$

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Factoring:

Factoring Polynomials is simply the reverse process of special product.

A polynomial with integral coefficient is no longer factorable if:

1. the coefficient have no common factor, and
2. it cannot be expressed as the product of two polynomial of lower degree.

Sample Problem 3: Factor the following polynomials

8. $24x^2 - 18x^3$

9. $60ab^5 - 105a^2b^4$

10. $28a^2b^4c^5 - 42a^3b^2c^4 + 56ab^3c^3$