CHAPTER 9: POLYNOMIALS & FACTORING

Multiplying Polynomials

OBJECTIVES

☐ I can multiply a monomial to a polynomial

☐ I can multiply two binomials

☐ I can multiply a binomial & a trinomial

PART 1: DISTRIBUTIVE PROPERTY

$$a(b+c) = ab+ac$$

$6(x-2) = 6(x) + 6(-2) = 6x - 12$

$-3(4x-1) = -3(4x) + -3(-1) = -12x + 3$

PART 1: DISTRIBUTIVE PROPERTY WITH POLYNOMIALS

1 Simplify each product.

a. $4b(5b^2 + b + 6)$ **b.** $-7h(3h^2 - 8h - 1)$ **c.** $2x(x^2 - 6x + 5)$

PART 2: DOUBLE DISTRIBUTION

1 Simplify each product.
  a. $(6h - 7)(2h + 3)$ **b.** $(5m + 2)(8m - 1)$ **c.** $(9a - 8)(7a + 4)$

PART 2: DOUBLE DISTRIBUTION

Simplify.
  22. $(x + 9)(x^2 - 4x + 1)$ **23.** $(a - 4)(a^2 - 2a + 1)$

PART 3: SPECIAL CASES

1 Find each square.
  a. $(t + 6)^2$ **b.** $(5y + 1)^2$ **c.** $(7m - 2p)^2$

PART 3: SPECIAL CASES

4 Find each product.
  a. $(d + 11)(d - 11)$ **b.** $(c^2 + 8)(c^2 - 8)$ **c.** $(9v^3 + w^4)(9v^3 - w^4)$

PART 3: SPECIAL CASES

Rule	The Square of a Binomial

$(a + b)^2 = a^2 + 2ab + b^2$

$(a - b)^2 = a^2 - 2ab + b^2$

The square of a binomial is the square of the first term plus twice the product of the two terms plus the square of the last term.

Rule	The Difference of Squares

$(a + b)(a - b) = a^2 - b^2$

The product of the sum and difference of the same two terms is the difference of their squares.

CAN YOU?? PROVE IT!!

❑ I can multiply a monomial to a polynomial

❑ I can multiply two binomials

❑ I can multiply a binomial & a trinomial

❑ Go back and finish all the blank problems ☺