

Algebra 1

Lesson 9.3

Special Products of Polynomials

Warm-Up

Find the product.

(a) $(5m+1)(3m-1)$

(b) $(a+3)(a^2+2a+3)$

(c) $(x-1)(x^2-3x+4)$

Example 1. Sum and Difference Pattern

Find the product.

(a) $(x+2)(x-2)$

(b) $(x+4)(x-4)$

(c) $(c-8)(c+8)$

Special Product Patterns

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

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

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

Example 2. Square of a Binomial

Find the product.

(a) $(x+2)^2$

(b) $(x+5)^2$

(c) $(c-8)^2$

(d) $(t-1)^2$

Try It!Find the product. *Be careful to check the signs (+, -)*

(a) $(a+9)(a-9)$

(b) $(y+5)(y-5)$

(c) $(d+4)^2$

(d) $(x-6)^2$

Example 3. More Square of a Binomial

Find the product.

(a) $(2x+y)(2x-y)$

(b) $(3z+2)(3z-2)$

(c) $(2n-5)^2$

(d) $(4x+3y)^2$

Assignment**New:** Pg. 572 #4 - 34 (evens, **SKIP** 20, 22)**Review:**

Simplify.

1. $(x^3)(x^5)$

2. $\frac{x^2}{x^8}$

3. $5x^0$

4. $(x^3y^5)^3$

5. $\frac{x^{-3}}{x^4}$

6. $(-3a^4b^{-1})(2a^2b^{-2})$

7. $(-c^3)(-c)^4(-c)$