

# Multiplying Special Cases Guide Notes

## Special Products:

### Type 1: Square of Binomial

$$(x + y)^2 = x^2 + 2xy + y^2$$

$$(x - y)^2 = x^2 - 2xy + y^2$$

### Type 2: Sum and Difference of the Same Two Terms

$$(x + y)(x - y) = x^2 - y^2$$

**Sample problem 1:** find the product of the square of the following binomials.

1.  $(a^3 - 5)^2$

2.  $(3x + 7)^2$

3.  $(5x^3 - 9y^4)^2$

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

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**Sample Problem 2:** find the product of the sum and difference of same two term.

5.  $(4x + 5y)(4x - 5y)$

6.  $(3x - 7)(3x + 7)$

7.  $(6x^{11} - 11y^4)(6x^{11} + 11y^4)$

8.  $(x^{11} - y^{21})(x^{11} + y^{21})$