FMP10 Name: _____
Date: _____

3.6 Factoring Special Trinomials

Product of Conjugates (two binomials that differ only by the sign of the 2nd term)
Ex. Simplify:

$(x-5)(x+5)$ $(10x+3)(10x-3)$

Difference of Squares: Binomial expression consisting of the subtraction of two perfect squares (the result of a product of conjugates)

$$(\boldsymbol{a-b})(\boldsymbol{a+b}) = \boldsymbol{a^2 - b^2}$$

Ex. Factor:

$4x^2 - 9$ $a^2 - 25b^2$

Ex. Multiply:

$(3x-4)(3x+4)$ $(a^2+7b)(a^2-7b)$ $2(6q-1)(6q+1)$

Ex. Factor:

$x^2 - 81$ $-16c^2 + 25a^2$ $m^2 + 16$ $7g^3h^2 - 28g^5$

Squaring a Binomial
Ex. Simplify:

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

Perfect Square Trinomial: Trinomial result of squaring a binomial

$$(\boldsymbol{a \pm b})^2 = \boldsymbol{a^2 \pm 2ab + b^2}$$

Ex. Factor:

$4x^2 + 12x + 9$ $x^2 - 8x + 16$

Ex. Multiply:

$(x + 5)^2$ $(3q - 2)^2$ $3(2a + c)^2$

How can we identify a perfect square trinomial? The first and last term must be positive perfect squares and the middle term must equal twice the product of the square roots of those terms

Ex. Determine if each trinomial is a perfect square, if yes factor using the pattern:

$x^2 + 6x + 9$ $c^2 - 14c + 36$ $25p^2 - 40pq + 16q^2$ $4x^2 + 20x - 25$

Ex. Determine the values of q that would make each trinomial a perfect square and factor:

$x^2 + qx + 1$ $9x^2 + qx + 16$ $49a^2 + qab + 36b^2$

Practice: Worksheet 84/86 (do 1st) & pg. 246/ #4, 7, 8, 11, 14, 17, 20 [handed in together]