

# Factoring Trinomials

$$\underline{ax^2} + bx + c$$

Just like factoring easier trinomials except now there is a coefficient in front of the  $x^2$  term.

Ex  $2x^2 + 7x + 5$

Now we need to write out factors of 1st and 3rd terms.

$2, 1$                        $5, 1$

GUESS and CHECK

(Write out possible combinations.)

~~$(2x + 1)(x + 5)$~~       or       $(2x + 5)(x + 1)$

*(Note: In the first expression, the middle terms are labeled 1x and 10x, and the second term is labeled 2x.)*

When we foil, will we get the middle term  $7x$ ?  
What do the signs need to be?

$$(2x + 5)(x + 1)$$

Ex.  $3x^2 - 14x - 24$

$1, 3$                        $1, 24$   
 $2, 12$   
 $4, 6$

$(3x + 1)(x - 24)$        $(3x + 2)(x - 12)$        $(3x + 4)(x - 6)$   
 $(3x - 24)(x + 1)$        $(3x - 12)(x + 2)$        $(3x - 6)(x + 4)$

Which middle terms could possibly get us  $-14x$ ?  
What would the signs have to be?

$$(3x + 4)(x - 6)$$

Assignment: pg 552 #1-18