

## Factoring Ugly Trinomials

**Recall**

$$(2x+1)(3x+4)$$

$$6x^2 + 8x + 3x + 4$$

$$6x^2 + 11x + 4$$

mult. the  
first term in  
each binomial

mult. the  
2<sup>nd</sup> term in  
each binomial

Ex.

$$2x^2 + 7x + 6$$

add (+) or --

$1 \cdot 2$        $1 \cdot 6$   
 $2 \cdot 3$

$$(1x + 2)(2x + 3)$$

~~4x~~  
~~6x~~ 3x

$$= (x+2)(2x+3)$$

guess &  
test  
each  
combination

Ex.

$$3x^2 - 2x - 8$$

subtract +-

$1 \cdot 3$        $1 \cdot 8$   
 $2 \cdot 4$

$$(1x - 2)(3x + 4) = (x-2)(3x+4)$$

~~-6x~~  
~~+4x~~

Ex.

$$5(15x^2 + 5x - 10)$$

$\frac{5}{5}$      $\frac{5}{5}$      $\frac{5}{5}$

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

$1 \cdot 3$        $1 \cdot 2$

$$5(x+1)(3x-2)$$

$3x-2x$

Is there anything in common?