

8.5 Factoring x^2+bx+c

The **BIG** idea...

Many trinomials can be written as the product of two binomials.

Example:

$$(x+3)(x+4) = x^2 + 4x + 3x + 12 \\ = x^2 + 7x + 12$$

So...

$$x^2 + 7x + 12 = (x+3)(x+4)$$

The process

1. Set up groupings with consideration for the sign.
2. Consider the factors of the constant.
3. Pick the factors with the desired sum/difference.
4. Place the factors into the groupings.

Factor.

1) $x^2 + 8x + 12$

2) $x^2 + 11x + 30$

3) $x^2 + 8x + 7$

Factor.

4) $x^2 - 6x + 8$

5) $x^2 - 15x + 50$

Factor.

7) $x^2 + 5x - 14$

8) $x^2 + 4x - 21$

6) $x^2 - 9x + 14$

9) $x^2 - 2x - 15$

10) $x^2 - 5x - 36$