

7.2A Factoring Quadratic Trinomials (a = 1) (reverse FOIL)

Trinomial: $ax^2 + bx + c$

Factors to: $(x + m)(x + n)$

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

1) Set up 2 pair of () to hold the binomial terms you will create

ex) ()()

2) Split the x term, find factors of c

ex) (x)(x)

3) Determine the signs of the binomials

- **2nd sign of the trinomial** determines if the signs of the binomials are the same or different

a + means use same signs $ax^2 + bx + c$

a - means use different signs $ax^2 + bx - c$

4) If the signs are the **same** - the 1st sign tells you if they are both + or =

$ax^2 + bx + c$ - both are positive (x +)(x +)

$ax^2 - bx + c$ - both are negative (x -)(x -)

****factors of c must **add** to middle term

If the signs are **different** - the 1st sign goes with the bigger number

****factors will 'subtract' to middle term (x -)(x +)

5) Place the factors of c in the binomials with their proper sign

(check with FOIL) (x + m)(x + n)

$$x^2 - 5x + 6$$

$$x^2 - x - 6$$

$$x^2 + x - 6$$

$$x^2 - 6x - 16$$

$$x^2 - 14x + 24$$

$$x^2 + 20 - 12x$$