

Factoring Quadratic Equations

① Determine the signs for your final Equation.

Examples.

$ax^2 + bx + c$
 ↑
 this is the sign they'll be.

positive = both signs are the same

$$x^2 + \quad x + \\ (x + \quad)(x + \quad)$$

$ax^2 + bx - c$

negative = 1 sign ⊕
 1 sign ⊖

$$x^2 - \quad x + \\ (x - \quad)(x - \quad)$$

$$x^2 + \quad x - \\ (x + \quad)(x - \quad)$$

$$x^2 - \quad x - \\ (x + \quad)(x - \quad)$$

* You will use this for simpler problems (no coefficient before x^2) OR to check your answer.

NO COEFFICIENT BEFORE x^2

① Determine the signs, write a blank equation. $x^2 - 12x + 36$
 $(x - 6)(x - 6)$

② Factor your C.

look for factors that

• add up to b if C is positive

• subtract to b if C is negative.

- 36
 1, 36
 2, 18
 3, 12
 4, 9

6, 6 → Add up to 12.

$$x^2 + 5x - 36 \\ (x + 9)(x - 4)$$

- 36
 1, 36
 2, 18
 3, 12
 4, 9

subtract to 5

← 4, 9