# Factoring Check List

1. Factor out a greatest common factor (GCF) if it exists.

2. If the trinomial is a special pattern use the pattern to factor it otherwise use the magic X and factor by rewriting the middle term.

Difference of Perfect Squares:
$$a^2 - b^2 = (a + b)(a - b)$$
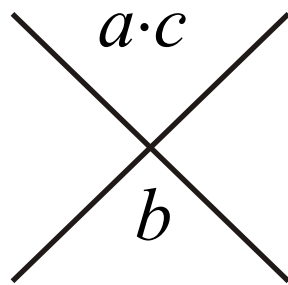Perfect Square Trinomial (<span style="color:red">plus pattern</span>):
$$a^2 + 2ab + b^2 = (a + b)^2 = (a + b)(a + b)$$
Perfect Square Trinomial (<span style="color:blue">minus pattern</span>):
$$a^2 - 2ab + b^2 = (a - b)^2 = (a - b)(a - b)$$

3. Use the magic X (simple form)
$$ax^2 + bx + c$$

$$a \cdot c$$

$$b$$

or use the magic X (full form)
$$ax^2 + bx + c$$

$$a \cdot c \cdot x^2$$

$$b \cdot x$$