

TRINOMIAL
(STANDARD FORM)

$$ax^2 + bx + c$$

$$(ax^2 + bx + c)$$

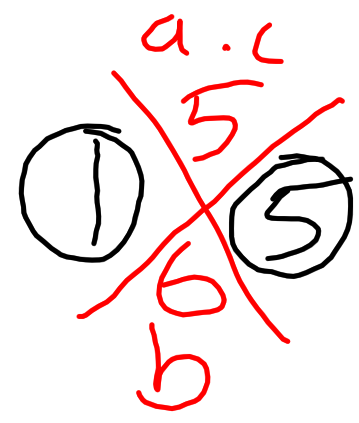
Steps:

1. Check that the trinomial is in the correct order. x^2 @ front
2. Check for GCF @ end*
3. Multiply a times c
4. Find two integers whose product is a.c and whose sum is b (helps to list them all out) ~~ac~~
~~b~~
5. Use the two integers to split the middle term into two separate terms.
6. Factor using the grouping.

Examples: $a=1$ $b=6$ $c=5$

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

$$(x^2 + \overset{\wedge}{1}x + 5x + 5)$$



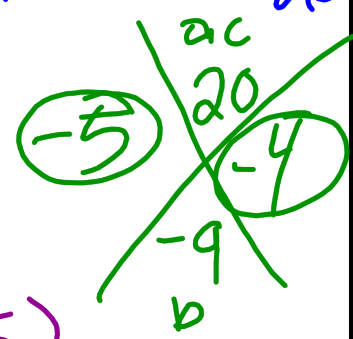
$$(x \oplus 1 \oplus) (\oplus 5 x \oplus 5)$$

$$x(x+1) + 5(x+1)$$

$$(x+5)(x+1)$$

$$\boxed{x}^2 - 9\boxed{x} + 20 \quad a=1 \quad b=-9 \quad c=20$$

$$(x^2 - 5x) + (4x + 20)$$



$$(\cancel{x}x - 5\cancel{x})(\cancel{-2} \cdot \cancel{2}x + \cancel{2} \cdot \cancel{2} \cdot 5)$$

$$x(x-5) - 4(x-5)$$

$$(x-4)(x-5)$$

$$m^2 + 4m - 21$$

$$a=1 \quad b=4 \quad c=-21$$

$$(m^2 + 7m)(-3m - 21)$$

$$\begin{array}{r} -21 \\ 7 \\ \hline 4 \\ -3 \end{array}$$

$$(m^2 + 7m)(-3m - 7 \cdot 3)$$

$$m(m+7) - 3(m+7)$$

$$(m+7)(m-3)$$

$t^2 - 15 - 2t$ $a = 1$ $b = -2$ $c = -15$
 $\swarrow \searrow$
 $t^2 - 2t - 15$
 $(t^2 + 3t)(-5t - 15)$
 ~~$(t + 3t)(-5t - 3(5))$~~
 $t(t + 3) - 5(t + 3)$
 $(t + 3)(t - 5)$

$$2a^2 - 16a + 32$$

$$a = -2 \quad b = -16 \quad c = 32$$

$$(2a^2 - 8a) - 8a + 32$$

$$(2a - 2 \cdot 2a) (a \cdot 2a + 2 \cdot 2a)$$

$$2a(a - 4) - 8(a - 4)$$

$$(2a - 8)(a - 4)$$