

# Factoring Tricky Trinomials ( $a \neq 1$ )

$$ax^2 + bx + c$$

(3 terms)

## Steps

- ① Multiply  $a \cdot c$  and create a factor table
- ② Identify the pair of factors that add to  $b$ -value
- ③ Rewrite the problem:
  - 1st term stays same
  - Last term stays same
  - Split the middle term into two terms using the #'s from step 2 with  $x$ 's attached to each
- ④ Factor by Grouping

ex

$$2x^2 - 5x - 3 \quad (3 \text{ terms})$$

Factor table for  $a \cdot c = 2 \cdot (-3) = -6$  and  $b = -5$ :

-1	6
-2	3

Sum of factors:  $-2 + 3 = 1$

$$2x^2 + 1x - 6x - 3 \quad (4 \text{ terms})$$

$$(2x^2 + x) + (-6x - 3)$$

$$x(2x + 1) - 3(2x + 1)$$

$$(2x + 1)(x - 3)$$