

Factoring Trinomials

Means 3

When you have to factor a trinomial, we use the AC Method

Standard Form of a Trinomial

$$Ax^2 + Bx + C$$

Steps

1

multiply the A and C terms together.



2

List the factors that will multiply to give you the $A \cdot C$



3

Choose the set of factors that will combine to give you the "B" term



4

write those factors in the middle and regroup



Pull

$$\begin{array}{ccc} \text{A} & \text{B} & \text{C} \\ |x^2 - 10x + 16 \\ (x^2 - 8x)(-2x + 16) \\ x(x-8) - 2(x-8) \\ \boxed{(x-2)(x-8)} \end{array}$$

$$1 \cdot 16 \\ A \cdot C = 16$$

List factors of AC

$$1, 16$$

$$4, 4$$

$$2, 8$$

$$\boxed{-2, -8}$$

$$|m^2 + 12m + 32$$

$$(m^2 + 4m) + 8m + 32$$

$$m(m + 4) + 8(m + 4)$$

$$(m + 8)(m + 4)$$

$$A \cdot C = 1 \cdot 32 = 32$$

$$1, 32$$

$$16, 2$$

$$4, 8$$

$$|y^2 - 7y - 8$$

$$(y^2 + y)(-8y - 8)$$

$$y(y+1) - 8(y+1)$$

$$(y-8)(y+1)$$

$$A.C = 1 \cdot -8 = -8$$

$$\textcircled{1, -8}$$

$$-1, 8$$

$$2, -4$$

$$-2, 4$$

$$|x^2 + 5x - 14$$

$$(x^2 + 7x)(-2x - 14)$$

$$x(x+7) - 2(x+7)$$

$$(x+7)(x-2)$$

$$AC = 1 \cdot -14 = \underline{-14}$$

7, -2

Factor Completely
 $4x^2 + 18x - 10$

$$(4x^2 - 2x) + 20x - 10$$

$$2x(2x-1) + 10(2x-1)$$

$$(2x+10)(2x-1)$$

$$2(x+5)(2x-1)$$

$$AC = 4 \cdot -10 = -40$$

$$\underline{-2, 20}$$

$$(4x^2 + 20x) - 2x - 10$$

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

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

$$2(2x-1)(x+5)$$

$$2x^2 - 17x + 21$$

$$(2x^2 - 3x) - 14x + 21$$

$$x(2x-3) - 7(2x-3)$$

$$(x-7)(2x-3)$$

$$AC = 2 \cdot 21 = \underline{42}$$

$$-2, -21$$

$$-1, -42$$

$$\underline{-3, -14}$$

$$-6x^2 - 23x - 20$$

$$(-6x^2 - 15x)(-8x - 20)$$

$$-3x(2x + 5) - 4(2x + 5)$$

$$\begin{aligned} &(-3x - 4)(2x + 5) \\ &-1(3x + 4)(2x + 5) \end{aligned}$$

$$AC = \frac{120}{-15, -8}$$