Warm Up Quiz then work on this

Factoring Trinomials

#1

$x^2 - 17x + 42$

$(x-3)(x-14)$

mult last: $+42$; add: -17

-1×-42

-2×-21

-3×-14

-6×-7

#2

$x^2 - 17x - 38$

$(x+2)(x-19)$

mult: -38; add: -17

$+1 \times -38$

$+2 \times -19$

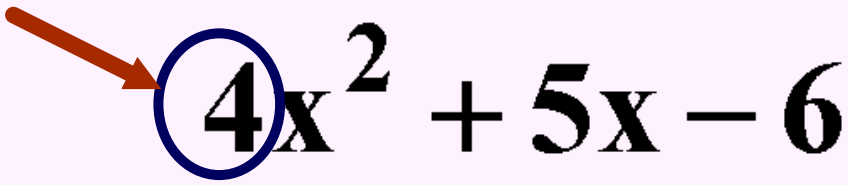
#3

$4x^2 + 5x - 6$

Hard trinomial

DECOMPOSITION

If there is a *numerical coefficient* in front of x^2, then we use a method for factoring called *DECOMPOSITION.*



Hard Trinomials

- has three terms with the form...

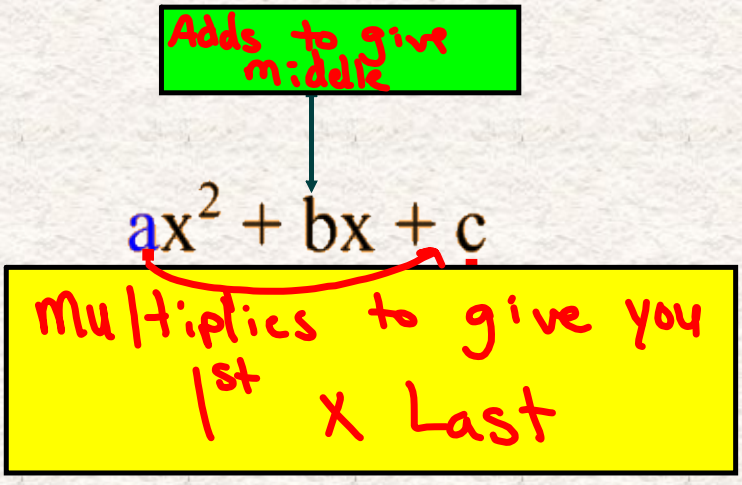
$$ax^2 + bx + c$$

- a hard trinomial has an "a" value **not equal to 1**.

- we use a method of decomposition to factor them.

DECOMPOSITION METHOD

- here's how it goes... "What two numbers?"



- once you find the two numbers, use them to break the MIDDLE TERM into two pieces (decomposition).

- then, factor by grouping.

Multiply

$4x^2+5x-6$

Sign on largest

different

$\_ + \_ = \square$

$\_ \times \_ = \square$

1sx x Last

Mult	add
-24	+5

-1 x +24

-2 x +12

-3 x +8

-4 x 6

Rewrite middle term using factors (-3, +8)

$= 4x^2 - 3x + 8x - 6$

Factor out GCf

Factor out GCf

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

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

Always check the following when you are asked to factor:

1) G.C.F (# and Letters) {if not....}
2) Simple Trinomial
3) Hard Trinomial ...

Factor Completely!

1. $2x^2+5x+3$

Sign on largest factor

Same

1st x Last Mult	add
+6	+5
+1 x +6	
+2 x +3	

$= 2x^2 + 2x + 3x + 3$

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

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

Factor Completely!

diff

2. $10x^2+13x-3$

$= 10x^2 - 2x + 15x - 3$

$= 2x(5x-1) + 3(5x-1)$

$(5x-1)(2x+3)$

mult 1st x last	add
-30	+13
-1 x +30	
-2 x +15	
-3 x +10	
-5 x +6	

★ 4. $2x^2+6x+4$ ★

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

Simple

3.6 Polynomials of the Form $ax^2 + bx + c$

Homework

Page 177 # 13 a to f

Page 177
Questions: 8, 13, 15, 19

→ GCF
→ Simple
→ Hard