November 7, 2017

Factoring Trinomials

$ax^2 + bx + c$; $a = 1$

Steps

1. Factor out GCF if it exists.
2. Find ac (Product)
3. Find b (Sum)
4. Find our two numbers that equal our product and sum.
5. Factor by Grouping

Nov 7-10:03 AM

Sign Patterns

p(ac)	s(b)	
+	+	Both numbers are positive.

$x^2 + 7x + 12 = (x+4)(x+3)$

same sign

+	−	Both numbers are negative.

$x^2 - 7x + 12 = (x-4)(x-3)$

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p	s	
−	+	opposite signs; where the larger number is positive.

$x^2 + x - 12 = (x+4)(x-3)$

−	−	opposite signs; where the larger number is negative.

$x^2 - x - 12 = (x-4)(x+3)$

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$x^2 - 25x + 84$ * no GCF

+p ① $ac = +84$

-s ② $b = -25$

$x^2 - 21x - 4x + 84$

GCF: x GCF:

$x(x-21) - 4(x-21)$

GCF: $(x-21)$

$(x-21)(x-4)$

$x^2 - 4x - 21x + 84$

$x^2 - 25x + 84$ ✓

−	−	x	+
20	5	100	✓
19	6	114	✓
21	4	84	✓

Nov 7-10:18 AM

$x^2 + 13x - 30$

① $ac = -30$

② $b = +13$

$x^2 + 15x - 2x - 30$

+	−	x	+
14	1	-14	✓
15	2	-30	✓

$x(x+15) - 2(x+15)$

$(x+15)(x-2)$

$x^2 - 2x + 15x - 30$

$+13x$ ✓

Nov 7-10:30 AM

$a \neq 1 \rightarrow a = 3$

$3x^2 + 19x + 28$ * no GCF

① $ac = +84$

② $b = +19$

$3x^2 + 12x + 7x + 28$

$3x(x+4) + 7(x+4)$

$(x+4)(3x+7)$

$3x^2 + 7x + 12x + 28$

$19x$ ✓

+	+	x	+
15	4	60	✓
16	3	48	✓
14	5	70	✓
12	7	84	✓

Nov 7-10:38 AM

Do 6.3

Nov 7-10:48 AM