November 7, 2016

Factoring Trinomials

ax^2+bx+c

where $a=1$

Nov 7-9:52 AM

$x^2 + 18x + 80$

① $ac = 1 \cdot 80 = +80$

② $b = +18$

③

+	+
10	8

$x^2 + 10x + 8x + 80$

$x(x+10) + 8(x+10)$

$(x+10)(x+8)$

$x^2 + 8x + 10x + 80$

$x^2 + 18x + 80$ ✓

Nov 7-10:02 AM

$x^2 - 25x + 84$

① $ac = 1 \cdot 84 = +84$

② $b = -25$

③

−	−
~~20~~	~~5~~
21	4

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

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

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

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

$x^2 - 25x + 84$ ✓

Nov 7-10:10 AM

Sign Patterns

* note: a must be positive.

① $ax^2 + bx + c$; (② ①)
$(x+4)(x+3)$
$bx = 7x$
- Both numbers have the same "sign"
- Both are positive

② $ax^2 - bx + c$;
$(x-4)(x-3)$
$bx = -7x$
- Same sign
- Both negative

③ $ax^2 + bx - c$;
$(x+4)(x-3)$
$bx = x$
- Opposite signs
- Larger number is positive

④ $ax^2 - bx - c$;
$(x-4)(x+3)$
$bx = -x$
- Opposite signs
- Larger number is negative

Nov 7-10:17 AM

$n^2 - n - 56$

① $ac = -56$

② $b = -1$

③

−	+
8	7

$n^2 - 8n + 7n - 56$

$n(n-8) + 7(n-8)$

$(n-8)(n+7)$

Nov 7-10:31 AM