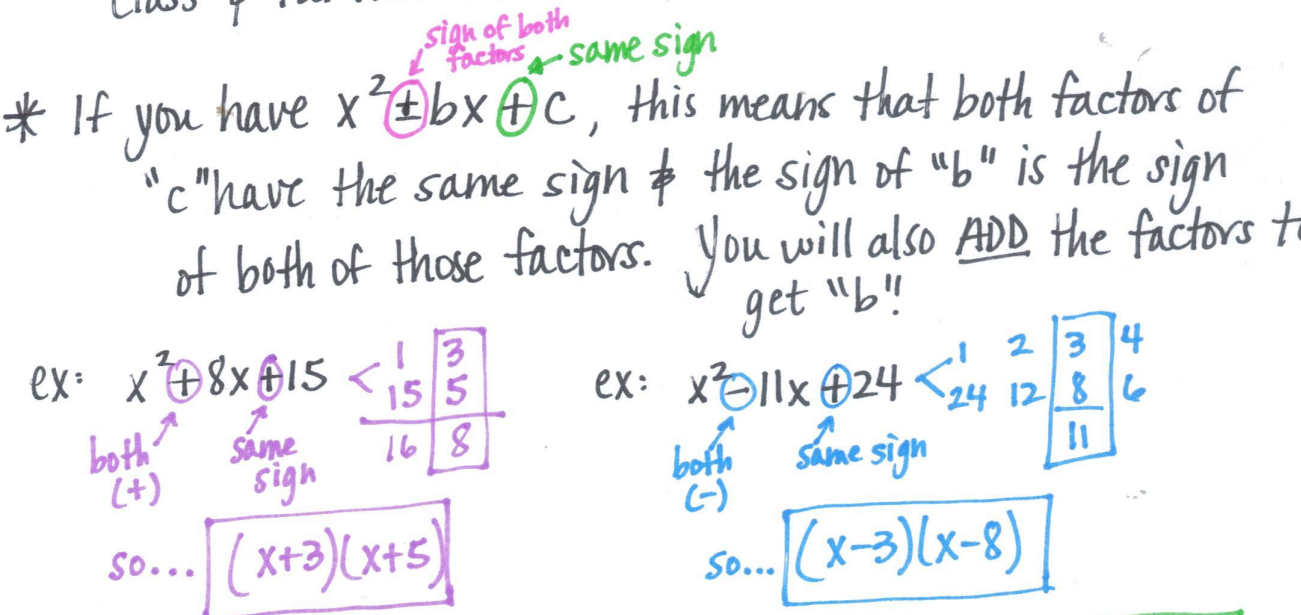
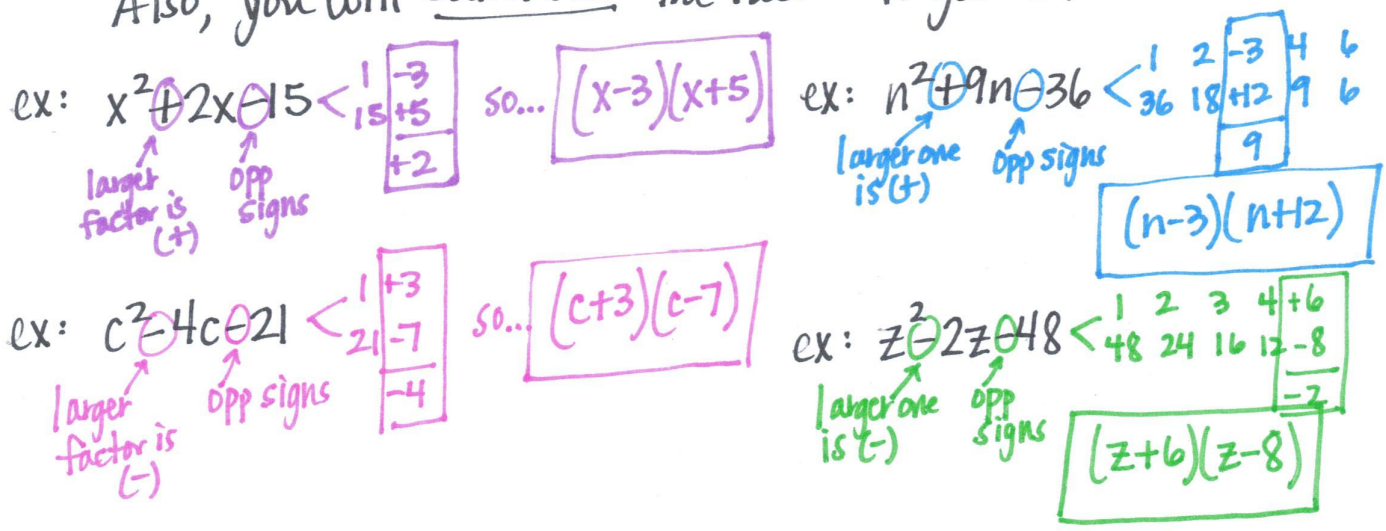
Factoring x^2+bx+c (Section 2-5)

* You must know how to factor to be successful in this class & further math!

** If you have $x^2 \pm bx + c$, this means that both factors of "c" have the same sign & the sign of "b" is the sign of both of those factors. You will also ADD the factors to get "b"!



** If you have $x^2 \pm bx - c$, this means that the factors of "c" have opposite signs & the sign of "b" is the larger factor. Also, you will SUBTRACT the factors to get "b".



* Is it possible for a trinomial to not be factorable? YES

ex: $x^2 - x + 2$ < 1, 2 ; 1 + 2 = 3 ∴ Not factorable!

(both (−); same sign ADD)

ex: $x^2 + 12x - 35$ < 1, −5 ; 35, +7 ; 7 − 5 = 2

(larger factor is (+); opp sign SUBTRACT)

* Applications:

ex: A rectangle's area = $x^2 - x - 72$ (opp signs) < 1, 72 ; 2, 36 ; 4, 24 ; 6, 12 ; +8, −9 ; −9 + 8 = −1

what are poss. dimensions?

$(x-9)(x+8)$

ex: rectangular rug: $r^2 - 3r - 4$ (opp) < +1, 2 ; −4, 2 ; −4 + 2 = −3

what are the dimensions?

$(r+1)(r-4)$

ex: $x^2 + 6xy - 55y^2$ (opp) < 1, −5 ; 55, +11 ; +6

$(x-5y)(x+6y)$

y's just tag along w/ the factors.

ex: $x^2 + 3xy - 18y^2$ (opp) < 1, 2, −3 ; 18, 9, +6 ; 3

$(x-3y)(x+6y)$

ex: $w^2 - 14wz + 40z^2$ (same) < 1, 2, −4, 5 ; 40, 20, −10, 8 ; −10 − 4 = −14

$(w-4z)(w-10z)$