Factoring Trinomials: ax^2+bx+c **(5.5)** **Math 098**

Let's investigate patterns from factoring that we have learned to date:

a.) $x^2+10x+16$ b.) $x^2+6x-16$

c.) $x^2-10x+16$ d.) $x^2-6x-16$

In review:

$ax^2 \pm bx+c$

$ax^2 \pm bx-c$

and multiply $(2x+1)(x+6)$

and multiply $(2x+3)(3x-4)$

Go back to the previous two questions and consider how many possibilities must be considered if we guess and check.

For the following "method" to work, we MUST ALWAYS factor out the _____ first.

Example 1: Factor

a.) $4x^2+12x+5$

Hint: When you can, start with the most "middle" values for *a*).

b.) $6x^2-5x+1$

c.) $2x^2-11x+12$

d.) $35x^2 + 4x - 4$

e.) $14a^2 - 3ab - 2b^2$

f.) $6xy^2 + 33xy - 18x$

g.) $-5x^2-19x+4$

h.) $30x^2-23x-45$

i.) $42a^2b+55ab-25b$

j.) $12x^2+5x-6$

Important: If the leading coefficient is 1 (x^2+bx+c) then you do NOT need a table.

Example 2: Solve $30x^2-26x+4=0$

Example 3: Given $f(x)=24x^2-37x$, find *a* such that $f(a)=72$.

Example 4: (You try) Factor $-30p^3q+88p^2q^2+6pq^3$

Example 5: Find the *x*-intercepts of $f\left(x\right)=63x^3+111x^2+36x$