How to Approach a Factoring Problem

**Is there a Greatest Common Factor?
If so, factor out the GCF.**

If 2 terms:

If 3 terms:

If 4 terms:

If difference of squares:
$a^2 - b^2$, factor as *(a + b)(a - b)*

or

If difference of cubes:
$a^3 - b^3$, factor as *(a - b)(a² + ab + b²)*

or

If sum of cubes:
$a^3 + b^3$, factor as *(a + b)(a² - ab + b²)*

If a perfect square trinomial:
$a^2 + 2ab + b^2$, factor as *(a + b)²*
or
$a^2 - 2ab + b^2$, factor as *(a - b)²*

If a trinomial of the form:
$x^2 + bx + c$ or *ax² + bx + c,*
factor as **2 binomials: (   )(   )**

**Group the 4 terms into groups of 2.
Factor out any monomial GCF's.
Factor out the binomial GCF.**

How do you know when you are finished?
Look at the **exponent**. If it is 2 or higher, you have to go through the list again and keep trying. If the exponent is down to 1, it can only have a GCF or be a grouping problem.