FACTORING

STEPS IN FACTORING

1. Factor out the greatest common factor (GCF). (There will **not** always be one)

2. Count the number of terms.

3. **TWO TERMS:** Look to see if you have difference of squares or sum or difference of cubes.

   $X^2 - Y^2 \Rightarrow (X+Y)(X-Y)$

   $X^2 + Y^2 \Rightarrow$ PRIME

   $X^3 - Y^3 \Rightarrow (X -Y)(X^2 + XY + Y^2)$

   $X^3 + Y^3 \Rightarrow (X + Y)(X^2 - XY + Y^2)$

   THREE TERMS: Look for two binomials.

   A. Trial and error method.

   B. Grouping number method

   FOUR TERMS: Factor by grouping method.

4. Check to be sure each factor is prime, if not, repeat steps 1-3.

5. Check by multiplying the factors out to see if you get the original polynomial.

FACTORING IS UNMULTIPLYING
