**Greatest Common Factor:** (\_\_\_\_\_\_\_\_\_\_ ) The largest number that divides exactly into two or more numbers/ expressions.

Example 1) Find the GCF for 24, 36, and 48

Example 2) Find the GCF for  and 

Example 3) Find the GCF for 

Try it: Find the GCF

1.  and  2.  and 

**Factoring out the GCF:**

Perhaps, the process of factoring by removing the greatest common factor can be best stated as

the ***reverse*** . In the distributive property, one is

 \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ a certain factor to all of the terms. In factoring by using the *GCF*,

one is ­­­­­­­­­­­\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ all of the terms by the *GCF* and working backwards to express a

polynomial as the product of a monomial factor and a polynomial factor.

**Example 4)** Consider this expression which utilizes the distributive property: . Visually, this is the distributive property:



**Example 5)** Factor out the GCF of the expression: 

**Example 6)** Factor the greatest common factor: .

**You Try**: Factor the following by using the GCF

|  |  |
| --- | --- |
| 1.
 | 1.
 |
| 1.
 | 1.
 |

**Example 7)** Factor the greatest common factor: .

Note that the *GCF* of the coefficients (28, -36, and -17) is 1. Also, note that the terms do not all share any common variables.

When one is only factoring out the greatest common factor, and **the *GCF* is 1**,

he/she should write that the expression is **­­­­­­­­­**  .