FACTORING

POLYNOMIALS

Please get calculators before you sit down.

Have notebooks out and be ready to take notes.

This is one of the most important topics we will cover. Factoring will be a part of your algebra studies all through this course, Trig, Math Analysis, and Calculus. There are several different ways to factor:

- 1- Use the GCF (always try this first)
- 2- Difference of Squares
- 3- Trinomials
- 4- Sums/differences of cubes

Notes on Factoring by using the GCF

Let's review what you know about factors of numbers:

The factors of 24, could be _____ or ____ or ____ or even _____ or even _____ because each of these pairs gives 24 when multiplied together.

So factors are the numbers or terms that multiply to make a given number or term. Let's review multiplying a monomial by a polynomial.

6(3x+4) =_____

 $x^2(2x-7) =$ _____

What we are going to do is go in the opposite direction.

ex. Factor 18x + 24 =

1st ask yourself what number divides into 18 and 24 (choose the largest number possible);

2nd divide into each of the terms of the problem and write the result in the parenthesis.

If you want to check your answer, multiply it back to the original problem. Ex.Factor $35x^2 - 7x + 14 =$

The largest divisor of 35, 7, and 14 is _____

Divide each term

Multiply to check your answer.

Try these. . Factor: 1) 27y - 12 2) 45x² - 15x + 24 3) 7xy + 14x + 21y Now lets look at these :

EX. Factor $5x^2 - 4x =$

Ex. Factor $14x^2y^3 - 4xy^4 + 12x^4y^5 =$

Try these.

- 1) $x^4y 10 xy^3 + 3xy$
- 2) 25xyz 35xy + 20xz

*Remember, **always** try GCF first when factoring!