Name: _____
Unit 7- Factoring

Date: _____
Lesson 1

Do Now:

a) Simplify: $\frac{(4x^3y - 2x^4 + 2x)}{2x} \div \frac{2x}{2x}$

$2x^2y - x^3 + 1$

b) Find the **greatest** common factor:4 and 10

2

c) Find the **greatest** common factor: x and x^2

x

Aim: How do we factor using the G.C.F method?

Greatest Common Factor: highest # that can be divided evenly into the #'s given

EXAMPLES:

(a) x^3 and x^5

$x \cdot x \cdot x \rightarrow x^3$

$x \cdot x \cdot x \cdot x \cdot x \rightarrow x^5$

x^3

(b) $8x^4y^9$ and $20x^4y^6$

$4x^4y^6$

#	G.C.F	Question	Check
1.	2	$\frac{2a+2b}{2}$ $2(a+b)$	$2(a+b)$ $2a+2b$ ✓
2.	b	$\frac{ab+bc}{b}$ $b(a+c)$	$b(a+c)$ $ab+bc$ ✓

Steps for Factoring G.C.F:

1.) Determine the G.C.F

a. Look for the highest numerical coefficient

b. Look for common variable with the lowest exponent.

2.) Put the **G.C.F** on the outside of parenthesis

3.) Divide each term by the **G.C.F**

4.) Put the quotient on the inside of parenthesis.

5.) Check your answer by distributing.

3. $\frac{7x}{7} - \frac{7y}{7}$

$7(x+y)$

check: $7(x+y)$

$7x+7y$ ✓

4. $\frac{4x}{4} - \frac{16}{4}$

$4(x+4)$

check: $4(x+4)$

$4x+16$ ✓

5. $\frac{2m^5}{2m} + \frac{4m}{2m}$

$2m(m^4+2)$

6. $\frac{x^2}{x^2} - \frac{x^5}{x^2}$

$x^2(1-x^3)$

7. $\frac{4x^{10}}{4x^8} - \frac{12x^8}{4x^8}$

$4x^8(x^2-3)$

8. $\frac{8y^9}{2y^4} - \frac{2y^4}{2y^4}$

$2y^4(4y^5-1)$

9. $\frac{5y^2}{y} + \frac{2y}{y}$

$y(5y+2)$

10. $\frac{3x^2}{3x} - \frac{9x}{3x}$

$3x(x-3)$

11. $\frac{3x}{3x} - \frac{6x^2}{3x}$

$3x(1-2x)$

12. $\frac{15y^2}{5y} - \frac{5y}{5y}$

$5y(3y-1)$

13. Which are factors of $15y^2 - 5y$?

$\frac{15y^2}{5y} - \frac{5y}{5y}$

1) $5y-1$ and $3y+5$

2) $5y$ and $3y-1$ $5y(3y-1)$

3) $5y$ and $3y$

4) $5y-y$ and $3y+5$

14. One of factors of $3x^3 - 6x^2$ is

$\frac{3x^3}{3x^2} - \frac{6x^2}{3x^2}$

1) $3x^2$

2) $3x^3$ $3x^2(x-2)$

3) $-6x^2$

4) $(x-6x^2)$