**Math II Notes Unit 1 Day 1**

**Factoring Review**

* Factors
	+ Recall: When 2 or more numbers are multiplied to form a product, each number is a “factor” of the product.
		- Factors of 12: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
* Factoring Polynomials
	+ ALWAYS factor out the \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ \_\_\_\_\_\_\_\_\_\_\_\_\_ \_\_\_\_\_\_\_\_\_\_\_\_\_ (\_\_\_\_\_\_\_) FIRST!!!
	+ A polynomial that can not be factored is \_\_\_\_\_\_\_\_\_\_\_\_.
	+ A polynomial is considered to be completely factored when it is expressed as the product of prime polynomials.

# \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

1. **Factoring out the GCF:**
	1.  b. 
		* 1.  d. $12p^{5}r^{9}+18p^{3}r^{2}-6p^{6}r^{3}$
2. 15x2y3 + 20x3y2 – 5x2y f. $3xy^{3}+9xy$
3. **Factor by grouping—for polynomials with 4 or more terms**

 1.  2. 

 3.  4. $6x^{2}y-8xy+21x-28$

1. **Difference of “Two Squares” Rule: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_**

**1.  2.  3. **

**4.  5.  6. **

**7.  8.  9. **

**Factoring Review** **Unit 1 Day 2**

**A. Factoring trinomials into the product of two binomials:**

 **1**. $2x^{2}+11x+15$

 **2.  3. **

**4.  5. **

**6.  7. **

**8.  9. **

**10.  11. **

**12.  13. **

**14.  15. **

**16.  17. **

**18.  19. **

**20.  21. **

**22.  23. **

An engineer comes to fix the heat in HHS. On a cold day, he finds that the change in temperature of a room can be modeled by $c=2v^{2}+4v-3$ for v > 0. C is the overall change in temperature and v is the volume of warm air pumped into a room in cubic meters. How much warm air needs to be pumped into a room to keep the temperature from changing?

**Concept Summary: Polynomial Factoring Techniques**

|  |  |
| --- | --- |
| **Techniques** | **Examples** |
| **1. Factoring out the GCF**Factor out the greatest common factor of all the terms |  |
| **2. Factoring by Grouping** |  |
| **3. Quadratic Trinomials**  |  |
| **4. Difference of Two Squares** |  |

**\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_**

**Unit 1 Day 4**

**Zero Product Property:**

* Let A and B be real numbers or algebraic expressions. If AB=0, then A=0 or B=0.
* This means that If the product of 2 factors is zero, then at least one of the 2 factors had to be zero itself!

**Finding the Zeros of a polynomial equation.**

* The zeros of an equation are the \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_, or \_\_\_\_\_\_\_.
* First, change y to a \_\_\_\_\_\_\_\_\_.
* Now, solve for \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_.
* The solutions will be the \_\_\_\_\_\_\_\_ of the equation.

**Ex**: How it works.

A) x2 + 3x - 18 = 0 B) 2t2 - 17t + 45 = 3t – 5

C) 3x - 6 = x2 – 10 D) y = x2- x - 6

Let’s Try some!!

1. x2 – 6x + 8 = 0 2. x2 – 11x + 24 = 0

3. 2x2 + 14x + 20 = 0 4. 20x2 – 11x – 3= 0

5. 2x2 – 7x – 4 = 0 6. x2 + 9 = -10x 7. (x – 2)2 = 18

8. 6x2 = 12x 9. 25x2 = 9 10. 7x2 – 105 = 0

16. 2x2 – 6x = -4 17. 4x2 + 5 + 9x = 0 18. 16x2 = 56x

**You TRY!!!**

 1. 2x2 + 15 = 13x 2. 16x2 = 8x