Algebra II – Mrs. Tilus This fabulous review belongs to: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Unit 4 Review- **Unit 4 Test: December 20th /21st**

1. (4pts) **Simplify** and **state the degree** of the polynomial below.

 $4\left(2ab^{2}-3bc+5a^{2}b^{2}c\right)-(6ab^{2}+2bc-a^{2}b^{2}c)$

2. Simplify by applying the laws of exponents.

 a) (-5x4$y^{3}$)2(3xy5) b) (2$c^{2}d^{3}$)3

 c. $x(x^{m-1})(x^{2m}) $ d. $(c^{n})^{4}(c^{2})^{n}$

3. Multiply the polynomials, and simplify your answer.

 a) ($3x-4$)2 b) $x^{2}(x-3)(x+3)$

4. Write each term as a **product of prime numbers and variables** by using a factor tree.

 Then find the GCF and LCM of the following monomials. Make sure to show factor trees and **simplify** your answers.

$39p^{2}q^{3}r^{2} 78p^{2}q^{2}r^{3} $

 **GCF=** \_\_\_\_\_\_\_\_\_\_\_\_

**LCM=** \_\_\_\_\_\_\_\_\_\_\_

\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

**SHOW ALL WORK TO RECEIVE FULL CREDIT**

5. Use the appropriate method to factor the following polynomials. (ONE is prime)

1. $v^{2}-11v-60$ b. $5x^{2}-21x-20$

 c. $25x^{2}-144y^{2}$ d. $8a^{3}+27$

 e. $u^{2}-8u-12$ f. $10x^{3}+15x^{7}-35x^{5}$

 g. $6x^{2}+13x+6$ h. $2a^{3}-162a$

6. Solve each of the following polynomial equations.

1. $x^{2} – 3x – 10 = 0$ b) $x^{2} – 12 = 4x$
2. $(x – 4)^{2} = 2x$ d) $\left(x+1\right)\left(x-5\right)=7$

7. Find and graph the solution set of $x^{2} – x – 12 \leq 0$.

Solution set: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

8. A rectangular residential lot with area 7475 m2 is 50 m longer than it is wide. Find the dimensions of the lot.