Name Key Algebra 2 Unit 1 Review Guide Date _____ Hour_____

Number System

Name all the number sets each number is in ∈ {N, W, Z, Q, Q', R, I, and/or C} **for Numbers 1-3**

1. $\frac{34}{-2}$: -17 $\frac{34}{-2} \in$ { ℤ, ℚ, ℝ, ℂ }
2. $4\sqrt{-49}$: $4\sqrt{-49} \in$ { 𝕀, ℂ } Imaginary $\sqrt{-1}$
2. $\sqrt{15}$: $\sqrt{15} \in$ { ℚ', ℝ, ℂ } or ℚ
4. $3-2i$: $3-2i \in$ { ℂ } real, Imaginary

3. If you are only to get Natural number answers, and you got 1.3 as your answer, could you have done the problem correctly? Explain. No 1.3 is Rational, Natural #s are counting numbers

Simplify each expression for Numbers 4-6 (Show work steps to earn credit)

4. $10(11-2^4)\div 4$

$10(11-16)\div 4$

$10(-5)\div 4$

$-50\div 4$

$-\frac{50}{4}$ or $-\frac{25}{2}$ or -12.5

5. $\frac{5+(6-10+3)^3}{(-1)^2}+2$

$\frac{5+(-4+3)^3}{1}+2$

$\frac{5+(-1)^3}{1}+2$

$5-1+2$

$4+2$

6

6. $\frac{2}{3}\sqrt{-2^3\div 8\cdot -4}-\frac{4}{15}$

$\frac{2}{3}\sqrt{-8\div 8\cdot -4}-\frac{4}{15}$

$\frac{2}{3}\sqrt{-1\cdot -4}-\frac{4}{15}$

$\frac{2}{3}\sqrt{4}-\frac{4}{15}$

$\frac{2}{3}\cdot\frac{2}{1}-\frac{4}{15}$

$\frac{4}{3}-\frac{4}{15}\rightarrow\frac{20}{15}-\frac{4}{15}=\frac{16}{15}$ or $1\frac{1}{15}$

Write the Algebraic expression for...

7. The product of 5 more than a number cubed and twice a different number is at least 25

$(x^3+5)\cdot 2y \geq 25$

8. The negative sum of half of x to the fourth power and eight has the same outcome as the difference of y with a coefficient of -9 and the quotient of thirty and x

$-\left(\frac{1}{2}x^4+8\right)=-9y-\frac{30}{x}$

Polynomial Parts

9. Write a Quartic 4 term polynomial that has a leading coefficient of -1.3, a constant that is 21, and that is in standard form.

$-1.3x^4+x^3+x+21$ (or x^2 or x^2)

10. Name the following for this polynomial $22x - 15x^2 + 61$

Standard Form	Lead Coefficient	Constant	Names (by degree and #of terms)
$-15x^2+22x+61$	-15	61	Quadratic Trinomial