Name: _____ Class: _____ Date: _____ ID: A

UNIT #1 Pratice Test: Classifying Real Numbers and Simplifying Numeric and Algebraic Expressions (Reference: Lessons #1,#2,#3,#4,#5,#6,#7,#9,#10,#11,#12,#15,#16,#17 & #18 in book)

Problem

1. **For each of the following numbers, identify ALL of the Subsets of Real Numbers to which it belongs.**

   1. $\frac{3}{4}$

2. 1,395

3. **For the following identify the set of numbers that best describes each situation (CHOOSE ONLY ONE SET). Explain in words your answer.**

   3. The amount of money on your cell phone bill.

4. The area of a circular platform.

5. **For the following question find both the Interesection $(A \cap B)$ and the Union $(A \cup B)$ of the sets.**

   5. $A = \{-8, -4, -1, 0, 1, 3, 5, 7, 9\}$
      $B = \{-4, 0, 2, 6, 7, 9, 11, 13, 20\}$

6. **For each of the following determine whether the statement is True or False. Provide a counterexample for any false statement.**

   6. The set of Integers is closed under division?

7. The set of Whole Numbers is closed under multiplication?

8. **Identify the factors, coefficients, variables, constants and number of terms for the following expression.**

   8. $-\frac{3xyz}{4} + 16rst - 5w + 2$

9. **Simplify each of the followign Numeric and Algebraic Expressions into lowest terms.**

   9. $\frac{8 + 2\left[(8)^2 - 4\right]}{4 \cdot 3 - 10}$

10. $|24| \div \left(|-3|+1\right) \cdot 2^3 - 3$

11. $\sqrt{208}$

12. $2(a+z)^3 - z^3$ Where $a = 3$ and $z = 2$

13. $\dfrac{-b(a-4)+b}{b}$ when $a = -2$ and $b = 25$.

14. $x^2y - 3xy + 2yx^2 - 2xy + x^2y^2$

15. $5xyz^3 - 3x^3z^2 - 4xy + 3x^3z^2 + 3xy - 2xyz^3$

16. $2x \cdot 3y^3 \cdot x^2 \cdot \dfrac{1}{6}y^4 \cdot 2x^3 \cdot y$

17. $\left(\dfrac{2x^2yz^5}{3m^9n^6}\right)^3$

18. $\left(4xy^7z^6\right)^3$

19. $6cd\left(5mn - yz + 1\right) - 15mcnd + 20yczd - 6dc$

20. $4x^2\left(2y^3z - 3n^2z + 6y\right) - 5z\left(3y^3x^2 - 6x^2n^2\right)$

21. **For each of the following, please identify what property of real numbers is being demonstrated.**

21. $\left(xyz\right)(123) = (123)\left(xyz\right)$

22. $\left(\dfrac{1}{2} + xy\right) + \dfrac{1}{5} = \dfrac{1}{2} + \left(xy + \dfrac{1}{5}\right)$

23. **For each of the following please translate the words into Algebraic expressions and the algebraic expressions into words.**

23. The product of the 8 and the difference of some number and 4.

24. $12 + \dfrac{3x}{7}$

25. **Please solve each of the following Pre-Algebra skills.**

    25. Write 6.75 as a percentage and a fraction or mixed number.

26. What is $\frac{4}{5}$ of 700?