Name: **Date:**

Our first quiz will be about 30-40 points and will cover the material we've studied so far.

What are some great ways to study for a math quiz or test?

Here are some problems to practice.

Real Number System:

1) Match the following sets with the appropriate classification of real numbers.

1. $\{1,2,3,4,...\}$	A. Integers
2. $\{...-3,-2,-1,0,1,2,3,...\}$	B. Whole Numbers
3. $\{0,1,2,3,4,...\}$	C. Natural Numbers

2) Which of the following is a rational number but not an integer?

(a) $\sqrt{12}$ (b) $-\frac{3}{7}$ (c) $\frac{15}{3}$ (d) -6

3) Which of the above numbers is **irrational**? Explain why you chose the number you chose.

Scientific Notation:

4) Express each number below using scientific notation.

a) 92960000 (miles between Earth and the Sun)

b) 0. 000000000753 (mass of a dust particle in kg)

5) Express each number below in standard form:

a) 4.512×10^{-4}

b) 7.2×10^{6}

Absolute Value:

6) Simplify the expressions below.

a) $|3-8|$ b) $|-1-9|+|2+4|-|1-3^2|$ b) $|-1|+|-2+4|-|-6|$

Square Roots:

7) Simplify each expression below.

a) $\sqrt{18} =$ 17) $-3\sqrt{50}$ 18) $\frac{1}{2}\sqrt{72}$

Set Theory and Venn Diagrams:

8) Central High School has 480 freshmen. Of those freshmen, 333 take Algebra, 306 take Biology, and 188 take both Algebra and Biology. How many freshmen at Central High School take neither Algebra nor Biology ?

9) A high school surveyed 260 of its students regarding participation in either track or cross country. The result of the survey showed that 92 students participated in track only, 38 students participated in cross country only, and 86 students participated in neither sport. Of those surveyed, how many students participated in *both* track and cross country?

10) *Universal set ={All fruit}*

A = {apples, bananas, oranges, grapefruit, peaches}

B = {lemons, peaches, apples}

$A \cup B =$

$A \cap B =$

$\overline{(A \cap B)} =$

11) If A={(1,2),(2,3),(3,4),(4,5),(5,6)} and B ={(4,7),(3,5),(2,3),(1,2),(0,1),(1,3)}, then find A ∩ B

12) Given:

U = {1, 2, 3, 4, 5, 6, 7, 8, 9, 10}
A = {2, 4, 6, 8, 10}
B = {1,2,3,4,5,6}

a) Find $A \cup B =$

b) Find $A \cap B =$

c) Find $A^c =$

d) $\sim (A \cup B) =$

e) Draw a Venn Diagram and shade $\sim (A \cap B) =$

13) List all the possible subsets of {a, b, c}

Evaluating Expressions:

14) Evaluate the following expressions when,

$$x = -2, \quad r = 2, \quad a = 6, \quad b = -8$$

a) $\sqrt{a^2 + b^2}$ b) $x^2 + 4$ c) $-x^2 + 4$

d) $\frac{4}{3}\pi r^3$ e) $|x - b|$ f) $-|x - b|$