

**Math 0097**  
**University of North Georgia**  
**Spring 2015**  
**Exam #1 Study Plan**

The following is a general outline of topics and concepts which **may** be covered on Exam #1.

**Sets**

- Definition of a set: what makes something a “member” of a set
- Notation: how are sets described or communicated
- Knowing the mathematical sets developed in class: given a specific example knowing in which sets the example is a member of – See prior quizzes for examples and review
- Knowing how to describe the members of set such as:  $S = \{x \in \mathbb{Z} | x \geq 8\}$

**Algebra Power Tools**

- Know all **seven tools** by “proper” name, their distinguishing features, and their specific formula as in: **Associative Tool** – applies only to addition and/or multiplication where the result is unchanged when the association of elements that are being added or multiplied is changed  $a + (b + c) = (a + b) + c$
- You should be able to distinguish a **Tool** when it is being used to generate a line from a prior line:  $-6x + 5 - 4x = 20$  *Start*  
 $-10x + 5 = 20$  *Commutative and associative tools*  
 $-10x = 15$  *Additive Inverse tool*  
 $x = -\frac{3}{2}$  *Multiplicative Inverse tool*
- Know what action results in the *Additive or Multiplicative Identity*.

**Fractions**

- Conversion of fractions from different forms – see 1.1 Number Systems (**COR**) and assignment
- Be able to “de-compose” a **composite number** into a product of its **Primes** (and know what is a Prime Number is).
- Be able to “divide out” the “**ONES**”!
- Know the **Fundamental Principle of Fractions**: its formula and how it used to reduce (simplify) fractions or create equivalent fractions with a different denominator.

**Operations using Integers -  $\mathbb{Z}$**

- Addition (Subtraction in terms of addition) and Multiplication (Division in terms of multiplication).
- The *Real Number Line*: its uses in describing operations
- *The Order Property of Real Numbers* – you should know how determine if a number is less than, equal to, or greater than another number. **HINT: Study (COS PA 1.1): #3 - #93 m3 and #95,#97,#98,#99,#101,#103,#106,#108,#110,#111,#113,#117,#118, #119-#122**
- **Place Value** and how to properly round numbers to a given place value.

### Mathematical Notations

- You should know and be able to use **all** the notations we have discussed thus far in class.

### Order of Operations

- Be able to use the Order of Operations correctly to simplify an expression.
- Be able to “**SHOW**” what Order you are using as you move through the process of simplifying an expression.

**GOOD LUCK!**