

**Math 0099**  
**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 – ***Set-Builder*** or ***Interval Notation***
- 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:  $S = \{x \in \mathbb{Z} | x \geq 8\}$
- Know how to graph a set on the ***Real Number Line*** -  $\mathbb{R}$
- You should know the symbols and be able to use the set connectors: ***And*** or ***Or*** to construct a new set from two separate sets. **HINT**: Review quizzes!

### Solving Linear Equations

- Be able to solve an equation for the variable  $x$  or  $y$  as needed

### Functions

- Know the definition of a ***Relation and Function***. What are their differences? How can you tell them apart?
- Know the various ways to describe Relations and Functions – Notation
- Know the Tests for a function and be able to use them appropriately
- Be able to give examples of Relations and Functions – *Think of vertical and horizontal lines*
- Know the ***Domain*** and ***Range*** of a function and what the mean
- Know how to identify and use the ***Rule*** of a function

### Linear Functions

- Be able to describe the characteristics of a line – *what does it mean to be a line?*
- Be able to explain the Domain and Range of specific examples of lines
- Know which type of line is a Relation, but not a Function – be able to explain in words!
- Be able to find the following Algebraically: **Slope ( $m$ ),  $x$  and  $y$  Intercepts, Domain/Range, equations in *Standard, Slope-Intercept, Point-Slope forms*.**
- Know how to graph a line *quickly*

- Know **FRACTIONS and their OPERATIONS!**
- Be able to use the information given to find other points on a line.
- Know how to use the slope of a line as a Rate of Change – *think rise over run!*
- Know all formulas used to find equations of lines
- Know how to find the equations to lines that are *parallel* or *perpendicular* to a given line
- Be able to Algebraically manipulate an equation to get the information from it you need to solve a problem
- Be able to “**synthesize**” linear concepts → functions; equations, Rate of Change; Domain; Tests; Checking if an equation is correct; Ranges; notation; etc. – **We can program machines to calculate, but only YOU can *think*, at least for now!**

**THE BEST OF LUCK!**