Number Systems and Sets

• The number systems we will use are the natural numbers, integers, real numbers (rational and irrational), and, at times, the complex numbers.
  - Make sure you know the standard symbols for each of these number systems.

• For the real numbers, we will use intervals frequently. Make sure you know the types of intervals.
  - Closed intervals, open intervals, half-closed (or half-open if you wish) intervals, closed and unbounded intervals, and open and unbounded intervals.

Functions

• The focus of our work in calculus will be functions.
  - You must know what the domain and
range of a function is and how to find them. (Especially the domain!)

• Representation of functions
  - As a list of ordered pairs
  - As a graph in the Cartesian plane (what’s this?)
  - As an algebraic formula relating the domain and range directly.

• Algebra of functions
  - Addition
  - Multiplication
  - Composition

• Types of functions
  - Linear Functions
    ~ Slope
    ~ Point - Slope formula
    ~ Slope - Intercept formula
    ~ Parallel, Perpendicular lines
  - Polynomial Functions
    ~ If the degree (what’s the degree?) is equal to one, then the polynomial is a linear function (or linear polynomial).
~ Power functions
- Even and Odd functions
- Rational Functions
  ~ Typically, we will think of rational functions as fractions of polynomials. However, we can think of more general types of rational functions that do not involve polynomials.
  ~ Vertical Asymptotes
  ~ Horizontal Asymptotes
- Exponential Functions
  ~ Rules of exponents
- Trigonometric Functions
• Inverse Functions: Roots, Logs, inverse trig functions
  - Existence of inverses
  - Graph of inverse
  - Roots
  - Logs
    ~ Properties of logs
    ~ Solving exponential equations
- Inverse trig functions