Chapter 1 Worksheet:

Assigned problems: Exercises pp. 39-40, #2a, 9, 10, 11, 13, 18, 23, 25, 36, 39, (quiz Thursday, 8/23).

- I. Describe the following concepts important for functions:
 - A. domain
 - B. range
 - C. composition
 - D. periodicity
 - E. symmetry
- II. Give examples as follows:
 - A. f and x / $f(x+2) \neq f(x) + 2$

B. x and y / $|x + y| \neq |x| + |y|$

C. x / -x > x

- III. Give the graph of a function f(x) on the real numbers, we translate its graph up 1 unit by plotting the function f(x) + 1. Describe how to translate it by 1 unit
 - right,
 - left,
 - and down.

IV. Draw a right triangle using sides of a, b, and hypotenuse c, and indicate how each of the functions sin, cos, tan, cot are defined in terms of a, b, and c.

V. What are the periodicity and symmetry (even/odd) properties of each of the trig functions:

A. \sin

 $B.\ \cos$

C. tan

 $D. \ \cot$

VI. Know basic definitions and properties of the following classes of functions: polynomial, rational, exponential, trigonometric (i.e. when I mention one of these classes, you should be able to talk about them knowledgably).