Math 19: Homework 1
Due: Wednesday, January 14, 9 AM (the start of class)

Instructions: You are responsible for turning in the assigned problems below only. You *do not* have to turn in the practice problems, but you are responsible for knowing how to do them. Assigned problems will be graded both on correctness and the clarity of your explanation. You must put your full name on your homework, and if you use more than one page, your work must be stapled.

Practice Problems: §1.1: 1, 7, 8, 30, 31, 32, 45, 46
§1.2: 3, 6, 9, 14, 15, 18
§1.3: 2, 10, 12, 15, 21, 33, 34, 41, 42
§1.5: 19, 24, 29
§1.6: 1, 5, 6, 7, 8, 9, 11, 25
§3.6: 1, 2, 3, 4

Assigned Problems:

§1.1, #73: If f and g are both even functions, is $f + g$ even? If f and g are both odd functions, is $f + g$ odd? What if f is even and g is odd? Justify your answers.

§1.2, #16: The manager of a furniture factory finds that it costs \$2200 to manufacture 100 chairs in one day and \$4800 to produce 300 chairs in one day.

a: Express the cost as a function of the number of chairs produced, assuming that it is linear. Then sketch the graph.
b: What is the slope of the graph and what does it represent?
c: What is the y-intercept of the graph and what does it represent?

§1.3, #45: Express the function $u(t) = \sqrt{\cos t}$ in the form $f \circ g$.

§1.6, #56: Find the domain of $f(x) = \ln(2 + \ln x)$. What is f^{-1} and its domain?

§3.6, #9: Prove that $\cos(\sin^{-1} x) = \sqrt{1 - x^2}$. Hint: Draw a triangle.