

Math 111.17 Fall 2002  
Assignment #1

This assignment is due at the beginning of class on **Tuesday, September 10, 2002**. You are encouraged to form study groups and collaborate with others on this assignment. However, the final work you submit must be your own. A piece of advice: *the assignments are worth very little in the computation of your final grade. It is better to suffer through not understanding something now, rather than copying from a friend just for the sake of completion. You will not have that luxury on the exams.* You must submit all problems that are marked with an asterisk (\*). YOUR ASSIGNMENT MUST BE STAPLED AND PROBLEM NUMBERS CLEARLY LABELLED. UNSTAPLED ASSIGNMENTS WILL NOT BE ACCEPTED!

**1.** Practice problems.

- Section 1.1 #5, 7, 23, 35
- Section 1.2 #1, 9
- Section 1.3 #1, 3, 5, 27
- Section 1.4 #2, 11, 21
- Section 1.5 #9, 17, 21
- Section 1.6 #13, 17, 19, 27, 51

**2.** \* Problems to hand in.

- Section 1.1 #8, 22, 42
- Section 1.2 #2, 6
- Section 1.3 #2, 28
- Section 1.4 #8, 12, 18
- Section 1.5 #12, 18
- Section 1.6 #10, 22, 28, 32

**3.** \* Suppose that  $f(t) = \log t$ ,  $g(t) = \sqrt{t}$ , and  $h(t) = 1 - t$ .

- (a) What are the domain and range of  $f(t)$ ?
- (b) What are the domain and range of  $g(t)$ ?
- (c) What are the domain and range of  $h(t)$ ?
- (d) What are the domain and range of  $f(g(t))$ ?
- (e) What is the domain of  $g(h(t))$ ?
- (f) What is the domain of  $f(g(h(t)))$ ?

**4.** \* What are the domain and range of the function  $f(x) = \frac{x^2 - 1}{x + 1}$ ? Sketch a graph of  $f(x)$  on the interval  $[-4, 4] = \{x \in \mathbb{R} : -4 \leq x \leq 4\}$ .