

Math 111.01 Summer 2003
Assignment #1

This assignment is due at the beginning of class on **Friday, June 27, 2003**. 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 #1, 2, 11, 21
- Section 1.5 #9, 17, 21
- Section 1.6 #13, 17, 19, 27, 51
- Section 2.1 #9

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
- Section 2.1 #2, 8

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 are the domain and range of $g(h(t))$?
- (f) What are the domain and range 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 $[-4, 4] = \{x \in \mathbb{R} : -4 \leq x \leq 4\}$.