

21-121 Calculus 1 (IM/Econ)

## Assignment 1

Solutions to *all* the following problems should be written up and hand in to your TA.

Due in recitation on Thursday, September 6, 2001

Section 1.1: Problems 1, 19, 22, 25

Section 1.2: Problem 10

Section 1.3: Problems 22, 32, 36

Section 2.1: Problem 4

Section 2.2: Problem 5, 12

Supplementary Problem\*: A manufacturer determines that the total number of units of output per day,  $q$ , is a function of the number of employees,  $m$ , where

$$q = f(m) = \frac{40m - m^2}{4}.$$

The total revenue,  $r$ , that is received for selling  $q$  units is given by the function  $g$ , where

$$r = g(q) = 40q.$$

Find  $(g \circ f)(m)$ . What does this composition function describe?

\*Problem taken from *Introductory Mathematical Analysis for Business, Economics, and Life Sciences*, ERNEST F. HAEUSSLER, JR. & RICHARDS S. PAUL (Eighth Edition)