

Name: \_\_\_\_\_

MATH 200 CALCULUS I (BUELER)

FEBRUARY 1, 2006

## Quiz #1

*Total of 25 points.*

1. (5 pts) What is the domain of the function

$$h(x) = \frac{1}{1 - e^x}?$$

2. (5 pts) Find formulas for the functions  $f \circ g$ ,  $g \circ f$ , and  $f \circ f$ , and their respective domains, if  $f(x) = \sin x$  and  $g(x) = 1 - \sqrt{x}$ .

3. (5 pts) A homeowner mows the lawn every Saturday morning. Sketch a rough graph of the height of the grass as a function of time over the course of a four-week period. (Let's suppose the homeowner lives in Fairbanks, and the four-week period is in July, not February.)

4. (5 pts) Use the given graph to sketch the graphs of  $f^{-1}$  (the inverse function of  $f$ ) and  $1/f$  on the same axes. Clearly label the two new graphs.

5. (5 pts) Sketch the graph  $y = \sin(x + 1)$ . (Be sure to mark at least one or two specific locations on each axis to give scale and locate important features.)