

Math 165, Section D
Professor Lieberman
October 30, 2002

QUIZ #7

Directions:

- (1) Submit the answer without the question. However, include this information with your answer: Your name, the course number (165), your section number (D11, D12, D13, D14, D15, or D16), and the quiz number.
- (2) Starting Wednesday October 30, there will be a box labeled “ungraded Math 165 Quizzes” outside my office (422 Carver). Place your answers in this box. DO NOT give your answers to your TA. No earlier quizzes will be graded
- (3) This quiz is due at 4 p.m., Monday, November 4.
- (4) Do not answer all the questions. Read the next direction to see which questions to answer. You will lose points for turning answers to questions other than those indicated in the next direction.
- (5) Do not answer any even numbered questions or any questions with the word “example” in them. Answer all other questions.

Question 1: Give an example of a function that is not one-to-one on the interval $-1 < x < 1$ but which is one-to-one on the interval $0 < x < 1$.

Question 2: Assume that a snowball melts so that its volume decreases at a rate proportional to its surface area. If it takes 3 h for the snowball to decrease to half its original volume, how much longer will it take for the snowball to melt completely?

Question 3: What is e^0 ?

Question 4: Use a calculator to evaluate the value of the limit

$$\lim_{h \rightarrow 0} \frac{2.7^h - 1}{h}$$

to two decimal places. What is the significance of this limit?