MAT 191 Fall 2004 Dr. Yackel's Sections
Group Homework IV
Due Friday, September 17

1. Do the muffin problem from the exam. Explain every step and why it works. Make sure that when you come up with a function for the first part, the value of the function at $t = 24$ is 100. In other words, do not change the time data before you plug into the function.

2. For this problem you will need to use the graph of the function e^x below. Go ahead and write your reasoning on another sheet.

   Consider the following values:

   (a) The slope of the tangent line to e^x at $x = 1$

   (b) The slope of the secant line on e^x crossing the graph at the x-values 0 and 1

   (c) $\dfrac{e^2 - e^1}{2 - 1}$

   (d) $\dfrac{e^2}{2}$

   (e) 0

   i. Represent (a), (b), (c), and (d) on the graph below. (This may involve drawing a line and having the quantity be the slope of that line.)

   ii. Put the values (a), (b), (c), (d), and (e) in increasing order. Explain why you are right by using your graph. Do not give an explanation by calculating the decimal values of each and then putting those in order.