Quiz 1   BASIC CALCULUS II

Name: _____

Topic covered: Riemann Sums and Error Control

Instructions:

1. Once you open the quiz, you have 50 minutes to complete it.

2. You may not use the book or any of your class notes, but you may use a calculator. You must work alone.

3. If you use your own paper, please staple it to the quiz before coming to class. If you don't have a stapler, buy one.

4. After completing the quiz, sign the pledge below stating on your honor that you have adhered to these rules.

5. Relax and enjoy....

6. **This quiz is due on Friday, February 2**, at the beginning of class. NO LATE QUIZZES WILL BE ACCEPTED.

Pledge: I, _____, pledge my honor as a human being and Occidental student, that I have followed all the rules above to the letter and in spirit.

1. (*6 points*) The graph of a function $y = g(t) = 1/t$ is shown below. Let A be the area under the curve $g(t)$, above the t-axis, and between the lines $t = 1$ and $t = 5$.

(a) Use a left-hand Riemann sum, with THREE rectangles, to approximate the area A. **NOTE: the length of the bases of the rectangles do not have to be equal to each other.**

(b) Use a right-hand Riemann sum, with FOUR rectangles to approximate the area A. Is this estimate an over-estimate or under-estimate?

2. (*4 points*) How small would the base of each rectangle have to be in order to insure that the error between the Riemann Sum and the EXACT AREA A would be no more than 0.0001? In other words, what is the biggest value of Δt that you are confident a Riemann sum will have error less than or equal to 0.0001?