Quiz **8**   BASIC CALCULUS II

Name: _____

Section: 8:30am or 10:30am (circle one)

Math 120
Wednesday, April 18, 2001
Ron Buckmire
Alan Knoerr

Topic covered: Infinite Series and Improper Integrals

The point of this quiz is to illustrate your connections between using comparisons to determine convregence for improper integrals and the Integral Test for Infinite Series.

Instructions:

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

2. Where ever possible indicate your answer clearly, in the form of a sentence, showing all work necessary to understand your solution.

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

4. 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.

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

6. Relax and enjoy....

7. **This quiz is due on Friday, April 20**, 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.

SHOW ALL YOUR WORK

1. Consider the following expressions. In each case, determine whether the expression converges or diverges and write your answer in the box. Filling in the box correctly is worth 2 points each.

To obtain full credit for these problems you must carefully state your REASONS why you believe the expression converges or diverges. This includes stating whether and how you are using the Comparison Test for Improper Integrals or the Integral Test for Infinite Series or the "*p*-rules" (or some other reason) to prove your answer in each case.

(a) *(5 points.)* $\displaystyle\int_1^\infty \frac{1}{t^2 + t}\,dt.$

(b) *(5 points.)* $\displaystyle\sum_{k=1}^\infty \frac{1}{k^2}.$