Quiz **5**

DUE: MON. MAR. 3

Name: _____

Prof. Ron Buckmire

Date: _____

Friday February 28

Time Begun: _____
Time Ended: _____

Topic covered: Determining Convergence of Improper Integrals By Comparison

The **student learning outcome** of this quiz is for you to give you more practice determining whether a particular improper integral will converge or diverge without evaluating it, but by comparing it to an improper integral you already know something about.

Reality Check:

EXPECTED SCORE : _____/**10**   ACTUAL SCORE : _____/**10**

Instructions:

1. Once you open the quiz, you have 30 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 extra paper, please staple it to the quiz before coming to class. UNSTAPLED SHEETS WILL NOT BE GRADED.

4. After completing the quiz, sign the pledge below stating on your honor that you have adhered to these rules. Complete the reality check to give yourself a sense of how well you think you did on the quiz.

5. Relax and enjoy....

6. **This quiz is due on Monday, March 3**, 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 YOUR WORK

Consider the improper integrals below. Write down whether you think the integral **converges** or **diverges** in the box (1 point). By selecting an appropriate integral (1 point), prove your selected choice is correct by using the comparison theorem (3 points).

(a) (*5 points*) $\mathcal{J} = \int_1^\infty e^{t^2+t+1} dt$ $\boxed{}$

(b) (*5 points*) $\mathcal{K} = \int_1^\infty \frac{1}{\sqrt{s^4+1}} ds$ $\boxed{}$