Quiz **2**   BASIC CALCULUS II

Name: _____

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

Math 120
Wednesday February 07, 2001
Ron Buckmire
Alan Knoerr

Topic covered: Properties of Definite Integrals

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, February 9**, 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. Given

$$f(x) = \begin{cases} -1, & \text{if} \quad -4 \le x < 0 \\ x - 1, & \text{if} \quad 0 \le x \le 4 \end{cases}$$

(a) (*3 points*) Sketch the function $f(x)$ on the axes below

(b) (*2 points*) Use your graph to help you evaluate $\int_{-4}^{0} f(x)\,dx$ *exactly.*

(c) (*2 points*) Use your graph to help you evaluate $\int_{0}^{4} f(x)\,dx$ *exactly.*

(d) (*2 points*) Use your previous answers to help you evaluate $\int_{-4}^{4} f(x)\,dx$ *exactly.*

2. (*1 point*) Now suppose $f(x)$ was defined as $f(x) = e^{x^2}, -4 \le x \le 4$ instead. Why wouldn't you be able to use the same technique you used in question (**1**) to evaluate $\int_{-4}^{4} e^{x^2}\,dx$ *exactly?*