

Math 120 Spring 98

Quiz 2

Name: _____

Date: _____

Time Begun: _____

Time Ended: _____

Basic Calculus 2
Friday January 30
Ron Buckmire

Topic covered: Evaluating the definite integral

Instructions:

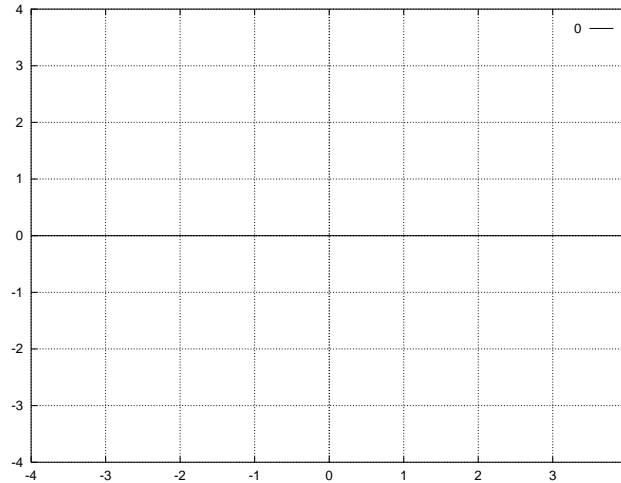
1. Once you open the quiz, you have 60 minutes to complete it.
2. You may use the book or any of your class notes, and you may use a calculator. You must work alone.
3. If you use your own paper, please staple it to the quiz before coming to class. If you don't have a stapler, buy one.
4. After completing 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 Monday, February 2, in 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. Given

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

(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 $f(x) = e^{x^2}$, $-4 \leq x \leq 4$ 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?