

Quiz 5

EXPERIENCED CALCULUS I

Name: \_\_\_\_\_

Date: \_\_\_\_\_

Time Begun: \_\_\_\_\_

Time Ended: \_\_\_\_\_

Math 114

Friday, October 6, 2005

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**Topic:** Derivatives

This quiz is intended to illuminate your understanding of derivatives.

**Instructions:**

1. Once you open the quiz, you have 30 minutes to complete it.
2. You may not use your text or any other source, including course materials. You may use a calculator. You must work alone. Do not discuss the contents of this quiz with anyone.
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 or borrow one. UNSTAPLED PAPERS WILL NOT BE GRADED.
4. After completing the quiz, sign the pledge below stating on your honor that you have adhered to these rules.
5. Your solutions must have enough details such that an impartial observer can read your work and determine HOW you came up with your solution.
6. **This quiz is due on Monday, October 10, 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.

## EXPLAIN YOUR ANSWERS

1. (5 points). Define the derivative for the following function.

$$\Gamma\left(\frac{3^x - \cos(x)}{\ln x}\right)$$

2. (5 points). **Hughes-Hallett, Page 112, # 30.** Consider a vehicle moving along a straight road. Suppose  $f(t)$  gives the vehicle's distance from its starting point at time  $t$ . Which of the graphs in the figure below could be  $f'(t)$  for the following scenarios:

- (a) A bus on a popular route with no traffic lights.  
(b) A car with no traffic and all green lights.  
(c) A car in heavy (Los Angeles-like) traffic conditions.

