

BONUS Quiz 1

BASIC CALCULUS I

Name: _____

Date: _____

Time Begun: _____

Time Ended: _____

Math 110

Friday, October 5, 2007

Ron Buckmire

Topic: Differentiation and Limits

This quiz is intended as an opportunity for you to illustrate your ability to obtain the derivative function f' given the original function $f(x)$.

Reality Check:

EXPECTED SCORE : _____/10

ACTUAL SCORE : _____/10

Instructions:

0. Before you open the quiz, look at the hint at <http://faculty.oxy.edu/ron/math/110/07>
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 bonus quiz is due on Monday, October 8**, 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. (10 points total) Recall that the limit definition of the derivative function is $f'(x) = \lim_{h \rightarrow 0} \frac{f(x+h) - f(x)}{h}$.
- (a) (8 points) Given $f(x) = \sqrt{x}$, use the limit definition of the derivative to obtain $f'(x)$ algebraically.

- (b) (2 points) Is the domain of $f'(x)$ different from the domain of $f(x)$? EXPLAIN YOUR ANSWER.