# Math 114 Fall 2005

BONUS Quiz **5** — Experienced Calculus I

Name: _____

Date: _____
Time Begun: _____
Time Ended: _____

Math 114
**Wednesday, October 19, 2005**
Ron Buckmire
Angela Gallegos

## Topic: Inverse Functions

This bonus quiz is intended as another opportunity for you to illustrate your understanding of the application of differentiation on inverse functions.

## 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/114/05/quiz.html`
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 24**, 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.

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# SHOW ALL YOUR WORK

Given the function $f(x) = e^{\sqrt{x}}$

a) (*4 points.*) Find the function $g$ which is the inverse of $f(x)$

b) (*1 point.*) Find the number **a** which solves the equation $f(a) = 2$. (Please, no decimal points!)

c) (*1 point.*) Find the number **b** which solves the equation $g(b) = 0$. (Please, no decimal points!)

d) (*2 points.*) Compute $g'(2)$ directly from the derivative of $g$. (Please, no decimal points!)

e) (*2 points.*) Find $f'(a)$ where **a** is the solution of $f(a) = 2$ from part **b.** (HINT: It is probably easier for you to use your answer to part **(d)** than differentiating $f(x)$ and evaluating at **a**.)