Math 118 Fall 2002  ADVANCED PLACEMENT CALCULUS

Quiz 5

DUE: MON. OCT. 6

Name: ________________________________  

Date: ________________________________  
Time Begun: ____________________________  
Time Ended: ____________________________  

Friday October 3  Ron Buckmire

**Topic covered:** Multivariable Optimization

The point of this quiz is for you to demonstrate your ability to find the extreme value of a multivariable function

**Reality Check:**

EXPECTED SCORE : __________/10  
ACTUAL SCORE : __________/10

**Instructions:**

0. Look for a hint about this quiz online, at http://blackboard.oxy.edu.

1. Once you open the quiz, you have 30 minutes to complete it.

2. You **may not** use the book or any of your class notes, but 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, October 6, 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

Consider the function of two variables defined for all \( x, y \in \mathbb{R} \):

\[ z = f(x, y) = x^2 + 2y^2 - x \]

(a) (5 points) Find the following derivatives:

\[ f_x = \]

\[ f_y = \]

\[ f_{xx} = \]

\[ f_{yy} = \]

\[ f_{xy} = \]

(b) (5 points) Find the \((x, y, z)\) coordinates of the absolute minimum value of \( z = f(x, y) \).