

Quiz 5

DUE: MON. OCT. 6

Name: _____

Date: _____

Friday October 3

Time Begun: _____

Ron Buckmire

Time Ended: _____

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 $x, y \in \mathbf{R}$:

$$z = f(x, y) = x^2 + 2y^2 - x$$

(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 $z = f(x, y)$.