Math 118 Fall 2003 ADVANCED PLACEMENT CALCULUS

Quiz **9**

DUE: MON. NOV. 10

Name: _____

Date: _____ **Friday November 7**
Time Begun: _____ Ron Buckmire
Time Ended: _____

Topic covered: Taylor Approximations

The idea behind the quiz is for you to illustrate your understanding of Taylor Approximations

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, November 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.

Math 118 Fall 2003 Quiz **Nine**

SHOW ALL YOUR WORK

Consider the function $f(x) = \sqrt{3^2 + x}$.
Our goal is to use Taylor Approximations to approximate the $\sqrt{10} = f(1)$ using information about the function $f(x)$ and its derivatives at $x = 0$.

(a) (*3 points*). Use the First Order Taylor Polynomial approximation, (also known as the tangent line) to obtain an approximation of $f(1) = \sqrt{10}$.

(b) (*4 points*) Use the Second Order Taylor Polynomial approximation to obtain another approximation of $f(1) = \sqrt{10}$.

(c) (*3 points*) **Answer the following three questions:** Which of the approximate values you computed in **(a)** and **(b)** is more accurate? How do you know which is more accurate? How would you improve the accuracy of your estimate?