Quiz **4**   BASIC CALCULUS I

Name: _____

Math 110
Date: _____   **Wednesday, October 4, 2000**
Time Begun: _____   Ron Buckmire
Time Ended: _____   Alan Knoerr

Topic: Derivatives and Linear Approximation

Instructions:

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. 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 quiz is due on Friday, 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

The problems below concern the function $f(x) = (x - 2)^2$.

(a) *(5 points)* Use algebra and the definition of the derivative to determine the exact value of $f'(3)$. Show your work!

(b) *(3 points)* Using your result from (a), find the equation of the line tangent to the graph of f at the point $(3, f(3))$.

(c) *(2 points)* On the plot below, sketch a graph of f and the line tangent to the graph of f at the point $(3, f(3))$.