Math 110 Fall 2007

Quiz **5** — Basic Calculus I

Name: _____

Date: _____
Time Begun: _____
Time Ended: _____

Math 110
Wednesday, October 10, 2007
Prof. Ron Buckmire

Topic covered: Differentiation Rules

The idea behind this quiz is to assess your understanding of the rules of differentiation.

Reality Check:

EXPECTED SCORE : _____**/10** ACTUAL SCORE : _____**/10**

Instructions:

1. Once you open the quiz, **you have 30 minutes to complete it**.
2. You may not use the book, any of your class notes. You may use a graphing calculator. You must work alone and not communicate with any student any information about your answers or the quiz itself.
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 in class on Wednesday, October 15**, 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 AND EXPLAIN ALL YOUR ANSWERS

Assume that f and g are functions which are unknown but differentiable everywhere.
Given that $f(0) = -1$, $f(1) = -2$, $f'(0) = -1$, $f'(1) = 3$, $g(0) = 3$, $g(1) = 1$, $g'(0) = -1$ and $g'(1) = -2$,

a. *(2 points.)* If $y = 2f(x) - 3g(x)$, evaluate $\left.\dfrac{dy}{dx}\right|_{x=1}$.

b. *(2 points.)* Evaluate $\dfrac{d}{dx}\left[f(x)g(x)\right]|_{x=0}$.

c. *(2 points.)* Evaluate $\dfrac{d}{dx}\left[\dfrac{f(x)}{g(x)}\right]\Big|_{x=0}$.

d. *(2 points.)* If $p(x) = x^2 f(x)$, evaluate $p'(1)$.

e. *(2 points.)* If $q(x) = \dfrac{x^3}{g(x)}$, evaluate $q'(1)$.