# Math 370 Spring 97

Quiz **1** Ron Buckmire

Name: ________________________

Numerical Analysis
**Friday March 28, 1997**
Ron Buckmire

Date: ________________________
Time Begun: ________________________
Time Ended: ________________________

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**Topic covered:** Numerical Differentiation

## Instructions:

1. Once you open the quiz, you have 60 minutes to complete it.
2. You may use the book or any of your class notes. 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. Relax and enjoy...
7. **This quiz is due on Monday, March 31**, in 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 following data:

| $x$ | 0.2 | 0.4 | 0.6 | 0.8 | 1.0 |
|---|---|---|---|---|---|
| $f(x)$ | 0.9798652 | 0.9177710 | 0.8080348 | 0.6386093 | 0.3843735 |

1. Find $O(h^2)$ approximations for $f'(0.4)$ and $f'(0.8)$

2. Use your answers from **(1)** to find an $O(h^2)$ approximation for $f''(0.6)$

3. Using the *ideas* (not the answers) from **(1)** and **(2)** try and compute an $O(h^2)$ approximation to $f^{(3)}(0.6)$

4. Can you find error bounds for these approximations? Why or Why not?