# Math 370 Fall 98

## Quiz 3

Numerical Analysis

Name: _____

Date: _____
Time Begun: _____
Time Ended: _____

**Friday September 18**
Ron Buckmire

## Topic : Rates of convergence of functions

The idea behind this quiz is for you to illustrate your ease with the relative rates of convergence of functions, and to recall your ability to find limits.

## Instructions:

1. Once you open the quiz, you have as much time as you need to complete it, but record your start time and end time at the top of this sheet.
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 September 21**, 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.

Math 370 Fall 1998 **EXPLAIN YOUR ANSWERS** Quiz **3**

**1.** Each of the following expressions all have the same limit as $h \to 0$. Express each of them in the form $f(h) = c + O(h^\alpha) = c + o(h^\beta)$ with the "best" (most accurate) integer values of $\alpha$ and $\beta$.

**a.** $e^h$

**b.** $(1 - h^4)^{-1}$

**c.** $\dfrac{\ln(1+h)}{h}$

**d.** $\cos(h)$

**e.** $1 + \sin(h^3)$