Math 214 Spring 2008

Quiz **3** *Linear Systems*

Name: ______________________________

Date: ____________________ **Friday February 8**
Time Begun: ____________________ Ron Buckmire
Time Ended: ____________________

Topic : Solving linear systems by elimination

The idea behind this quiz is for you to indicate your understanding of the basic natures of linear systems, and your abiity to execute the Gaussian elimination process.

Reality Check:

EXPECTED SCORE : __________**/10** ACTUAL SCORE : __________**/10**

Instructions:

0. Please look for a hint on this quiz posted to `faculty.oxy.edu/ron/math/214/08/`
1. Once you open the quiz, you have **30 minutes** to complete, please 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 February 11**, 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.

1. Consider the system of equations below, where a is an unknown parameter.

$$\begin{aligned} ax + 3y &= -3 \\ 4x + 6y &= 6 \end{aligned}$$

a. (*6 points*). Use elimination to form the upper-diagonal form of the augmented coefficient matrix for this system. Back substitute to get solutions for x and y in terms of the parameter a. What assumption(s) about a do you have to make to do this?

b. (*2 points*). If $a = 0$ how many solutions does this system have? Either find the solution(s) or explain why the system can not be solved.

c. (*2 points*). If $a = 2$ how many solutions does this system have? Either find the solution(s) or explain why the system can not be solved.