

BONUS QUIZ 5

Linear Systems

Name: _____

Date: _____

Friday February 24
Ron Buckmire

Topic : Gauss-Jordan Elimination and Matrix Inverse

The idea behind this quiz is for you to illustrate your understanding of how to compute a matrix inverse.

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/214/06/
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. **UNSTAPLED QUIZZES WILL NOT BE GRADED.**
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 27**, 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. (a) Show that the following matrix is invertible if $a \neq 0$ and $a \neq b$ by using Gauss-Jordan elimination to compute A^{-1} when $A = \begin{bmatrix} a & b & b \\ a & a & b \\ a & a & a \end{bmatrix}$ where a and b are unknown real numbers.

- (b) Check your result in (a) by using your answer to find the inverse of $B = \begin{bmatrix} 1 & 2 & 2 \\ 1 & 1 & 2 \\ 1 & 1 & 1 \end{bmatrix}$.