

## MATH 54 – QUIZ 5

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Name: \_\_\_\_\_

**Instructions:** You have 20 minutes to take this quiz, for a total of 10 points. Good luck, and may Bomberman be with you!

1. (5 points) Suppose  $A$  is a  $7 \times 8$  matrix such that when you solve  $A\mathbf{x} = \mathbf{0}$ , you get exactly one free variable. Do the columns of  $A$  span  $\mathbb{R}^7$ ? Explain why or why not, using a theorem learned in this course.

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Date: Friday, September 26th, 2014.

2. (5 points) Calculate the following determinant:

$$\begin{vmatrix} 1 & -2 & 5 & 2 \\ 0 & 0 & 3 & 0 \\ 2 & -6 & -7 & 5 \\ 5 & 0 & 4 & 4 \end{vmatrix}$$