Name:_____
Quiz 1; Friday, February 10
MATH 54 with Prof. Sethian
GSI: Alex Carney

You have 15 minutes to complete the quiz. Calculators are not permitted.

1. (2 points) Write the $3x3$ matrix E such that multiplying EA replaces the third row of A with the sum of twice the first row of A and the original third row of A.

2. (2 points) What is the determinant of the following matrix:

$$\begin{bmatrix} 2 & 4 & 3 & 1 & 1 \\ 0 & 1 & 4 & -1 & 17 \\ 0 & 0 & 2 & -1 & 0 \\ 0 & 0 & 1 & 2 & 3 \\ 0 & 0 & -2 & -2 & 0 \end{bmatrix}$$

3. (4 points) State whether the following is or isn't a vector space, and if not, briefly state why:

   (a) The set of all invertible 2×2 real (i.e with entries in $\mathbb{R}$) matrices.

   (b) The set of all 2×3 real matrices.