MA 237-02 §4.1- 6.1 Quiz #5	score	Name:4 April 2002
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1. Find the coordinates of $X = [1,2]^t$ in the ordered basis $\{[1,1]^t, [2,-1]^t\}$. Show your work. (5 points)

^{2.} Use the Gram-Schmidt process to find an orthogonal basis for the subspace of \mathbb{R}^3 spanned by the vectors {[0, 1, 1], [1, 1, 1]}. (5 points)

3. Find the determinant of the matrix

$$\begin{bmatrix} 0 & 2 & 0 \\ 2 & 127 & 2 \\ 1 & -89 & 1 \end{bmatrix}$$

by expanding along the first row. Show your work. Based on your calculation of the determinant, does this matrix have an inverse? Explain. *(5 points)*

4. Determine if the vector X = [1, 2, 1] is an eigenvector for the matrix (5 points)

$$A = \begin{bmatrix} 1 & 2 & 3 \\ 3 & 2 & 1 \\ 1 & 1 & 1 \end{bmatrix}$$