MATH 316 Quiz 2 NAME:

1. Find a nonzero 2×2 matrix B such that

$$B \begin{bmatrix} 1 & 2 \\ 2 & 4 \end{bmatrix} = \begin{bmatrix} 0 & 0 \\ 0 & 0 \end{bmatrix}.$$

2. Show that the following set W is a subspace of R^3,

$$W = \left\{ \begin{bmatrix} x \\ y \\ z \end{bmatrix} : x - y + 3y = 0 \right\}.$$

3. Find bases for $ker(A)$ and $im(A)$ where

$$A = \begin{bmatrix} 1 & 1 & 2 & 2 \\ 1 & 2 & 2 & 3 \\ 1 & 3 & 2 & 4 \end{bmatrix}.$$