Name_____
Student I.D._____

Math 2250-1
Quiz 6
October 5, 2012

1a) What is the span of a collection of vectors $\underline{\boldsymbol{v}}_1, \underline{\boldsymbol{v}}_2, \ldots \underline{\boldsymbol{v}}_n$?

(1 point)

1b) What does it mean for vectors $\underline{\boldsymbol{v}}_1, \underline{\boldsymbol{v}}_2, \ldots \underline{\boldsymbol{v}}_n$ to be linearly independent?

(1 point)

1c) What is a basis for a vector space/subspace W ?

(1 point)

2a) Find a basis for the solution space to homogeneous matrix equation $A\,\underline{\boldsymbol{x}} = \underline{\mathbf{0}}$, where A is the matrix on the left below, and its reduced row echelon form is on the right:

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

(6 points)

2b) What is the dimension of the solution space in 2a?

(1 point)