Dr. Z.'s Math 250(2), (Fall 2010, RU) REAL Quiz #7 (Nov. 4, 2010)

NAME: (print!) _____

E-MAIL ADDRESS: (print!) _____

1. (5 points) Find a basis for the null space of the matrix

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

2. (5 points, 1 each) Deteremine whether the following statements are True or False. Give a short expalanation (or an example or counter-example) in each case. (**No credit without explanation**).

(a) The subspace $\{\mathbf{0}\}$ is called the null-space.

(b) If $\mathcal{S}$ is a linearly independent subset and Span $\mathcal{S}$=V, then $\mathcal{S}$ is a generating set for V.

(c) R^3 contains at least three different subspaces.

(d) A vector $\mathbf{v}$ is in $ColA$ if and only if $A\mathbf{x} = \mathbf{v}$ is consistent.

(e) The pivot columns of the matrix A (i.e. the columns corresponding to the pivot columns of the reduced-row-echelon form R, but those of A, not of R) always form a basis for its column space.