Dr. Z.'s Math 250(2), (Fall 2010, RU) REAL Quiz #10 (Dec. 9, 2010)

NAME: (print!) _____

E-MAIL ADDRESS: (print!) _____

1. (5 points) Apply the Gram-Schmidt process to replace the given linearly independent set $\mathcal{S}$ by an **orthonormal** set with the same span as $\mathcal{S}$.

$$\mathcal{S} = \left\{ \begin{bmatrix} -1 \\ 3 \\ 4 \end{bmatrix} \;,\; \begin{bmatrix} -7 \\ 11 \\ 3 \end{bmatrix} \right\} \quad .$$

2.(5 points) Using **1**, find matrices Q and R in a QR factorization of the matrix

$$A = \begin{bmatrix} -1 & -7 \\ 3 & 11 \\ 4 & 3 \end{bmatrix} \quad .$$