Math 2210Q (Roby) **Practice Quiz #1** 22 January 2014

PLEASE WRITE YOUR NAME AT THE BOTTOM OF THE BACK OF THIS SHEET, NOT ON THE FRONT.

1. Mark each of the following as **True** or **False**. You may give reasoning to support your answer, which may give you partial credit.

   (a) The vector $2\mathbf{v_1} + \sqrt{5}\mathbf{v_3}$ is a linear combination of $\mathbf{v_1}, \mathbf{v_2}$ and $\mathbf{v_3}$.

   (b) Asking whether the linear system corresponding to an augmented matrix $[\mathbf{a}_1\ \mathbf{a}_2\ \mathbf{a}_3\ \mathbf{b}]$ has a solution amounts to asking whether $\mathbf{b}$ is in $\text{Span}\{\mathbf{a}_1, \mathbf{a}_2, \mathbf{a}_3\}$.

2. Find the general solution of the system whose augmented matrix is as follows:

$$\begin{pmatrix} 0 & 1 & -6 & 5 \\ 1 & -2 & 7 & -6 \end{pmatrix}$$

3. Is the following matrix in reduced echelon form, echelon form, or neither? Explain!

$$\begin{pmatrix} 1 & 0 & 1 & 0 \\ 0 & 1 & 1 & 0 \\ 0 & 0 & 0 & 1 \end{pmatrix}$$