Math 20F - Linear Algebra - Winter 2003

Quiz #3½ — February 4

Do not hand in this quiz: it is for self-assessment.

Try this quiz without referring to the answers (on back of paper copy) first!

1. Let $S = \left\{ \begin{pmatrix} x \\ y \end{pmatrix} \in \mathbb{R}^2 : x^2 \geq y \right\}$. Is $S$ a subspace of $\mathbb{R}^2$? Prove your answer.

2. Let $v_1 = \begin{pmatrix} 1 \\ 2 \\ 3 \end{pmatrix}$ and $v_2 = \begin{pmatrix} 4 \\ 5 \\ 6 \end{pmatrix}$. Is $\{v_1, v_2\}$ a spanning set for $\mathbb{R}^3$?

If not, give an example of a $x \in \mathbb{R}$ which is not in $span(v_1, v_2)$. 