Math 307 Quiz 4

March 4, 2015

Problem 1. Let $V \subseteq \mathbb{R}^n$ be a subset. Define what it means for V to be a subspace of $\mathbb{R}^n$.

Problem 2. Give an example of a subspace V of $\mathbb{R}^2$ that has more than one element, but that is not all of $\mathbb{R}^2$

Problem 3. Show that

$$V = \left\{ \begin{bmatrix} x \\ y \\ z \end{bmatrix} : x + 2y - z = 0 \right\}$$

is a subspace of $\mathbb{R}^3$.

Problem 4. Consider the matrix

$$A = \begin{bmatrix} 1 & 1 & 0 \\ 1 & 0 & 1 \\ 0 & 1 & 1 \end{bmatrix}.$$

Determine the inverse of A.