Quiz 3

Name:

1. Let V and W be finite dimensional vector spaces with an one-to-one linear transformation $T : V \to W$. Prove that $\dim V \leq \dim W$. (Hint: If X is a vector space with $\dim X = n$ then any linearly independent subset of X must have cardinality less than n.)

2. Let V and W be a finite dimensional vector spaces with a onto linear transformation $T : V \to W$. Let S be any spanning set of V. Prove that $T(S) = \{T(s) : s \in S\}$ is also spanning.