Math 525 — Quiz 16 – November 20

Name:_____

1. Let $V$ be a vector space and let $V^\star$ be the dual of $V$, so $V^{\star\star}$ is the dual of $V^\star$. There is a natural map $V \to V^{\star\star}$. How do you define this map?

2. Suppose $V$ is an infinite-dimensional vector space and consider the map $V \to V^{\star\star}$ of problem 1. Is this map one-to-one? Is it onto? (Only yes/no answers are necessary.)

3. Let $A$ be an $n \times n$ matrix. What is the "$i, j$ cofactor" of $A$?

4. What is the "cofactor formula for the inverse" of a matrix $A = (a_{ij})$?