

Name:

Quiz 2

26 May 2006

If the statement is true, write “True” in the box. If the statement is false, write “False” in the box. In either case, justify your answer by proving the statement true or false. Do not use books, calculators, or any other outside help—just you and the quiz. Do the quiz in one sitting.

1. Prove or disprove: It is possible to have a vector space with exactly two distinct vectors in it.

2. Prove or disprove: S is a subspace of R^3 , where

$$S = \{(a, b, c)^T \mid b = a + c\}.$$

3. Prove or disprove: If $\{\mathbf{v}_1, \mathbf{v}_2, \mathbf{v}_3\}$ is a linearly dependent set with nonzero vectors, then each vector in the set is expressible as a linear combination of the other two.