

Name _____

Student I.D. _____

Math 2250-1
Quiz 6
October 7, 2011

1) What two properties must a subset W of a vector space V satisfy in order to be a subspace of V ?
(2 points)

2) Consider the unit circle in R^2 , i.e. $W = \left\{ \begin{bmatrix} x \\ y \end{bmatrix} \in R^2 \text{ such that } x^2 + y^2 = 1 \right\}$. Give a reason to explain why W is not a subspace of R^2 .
(2 points)

3a) The solution set in R^3 of the equation
$$x + y + 3 \cdot z = 0$$
is a subspace of R^3 . Find a basis for this subspace. (You don't need to justify your answer on this short time limit quiz, but do show your work.)
(5 points)

3b) What is the dimension of the subspace in (3a).
(1 point)

