Math 228: Intro to Lin Alg & Diff Eqns   Name:_____

Quiz 4   *February 21, 2002*   Section:_____

1. Determine which of the following sets S are subspaces of the given vector space V. Be sure to justify your statements.

a) $S = \{(1+x, 2+2x) \mid x \in R\}$, $V = R^2$

b) Let A be an $m \times n$ matrix. $S = \{\mathbf{x} \in R^n \mid A\mathbf{x} = \mathbf{0}\}$, $V = R^n$

c) Let $f, g \in C[a, b]$. $S = \{tf + sg \mid t, s \in R\}$, $V = C[a, b]$

2. Let $S = \{(0, 1, 1, 1), (1, 1, 1, 0), (1, 0, 0, 1)\}$. Determine whether S is linearly dependent or linearly independent.