Linear Algebra | Quiz for Section 4.5 | November 5, 2009

Name: _____ R. Hammack Score: _____

Directions: Please answer all questions in the space provided. Use of calculators or any form of electronic communication device is strictly forbidden on this quiz.

1. A matrix A is **symmetric** if $A^T = A$. Find a basis for the vector space of all 3×3 symmetric matrices. Explain your reasoning.

2. Consider the following subspace of $\mathbb{R}^4$: $W = \{(t, 3s - 4t, t + s, s) \ : \ s \text{ and } t \text{ are real numbers}\}$
Find a basis for W. State the dimension of W.