

Name: _____

Section: _____

Math 54 Lec 006 Quiz 7

Tuesday, July 17, 2018

Justify your assertions; include detailed explanation, and show your work. Closed book exam, no sheet of notes and no calculator. This quiz is worth 9 points total.

1. (3 points) Let $W = \text{Span} \left\{ \begin{pmatrix} 0 \\ 0 \\ 1 \\ 1 \end{pmatrix}, \begin{pmatrix} 2 \\ -2 \\ 5 \\ -4 \end{pmatrix}, \begin{pmatrix} 2 \\ -2 \\ 0 \\ 0 \end{pmatrix} \right\}$. Use Gram-Schmidt to find an orthogonal basis for W .

2. (3 points) Let W be the same vector subspace of $\mathbb{R}^4$ in question 1. Find $\text{Proj}_W \begin{pmatrix} 1 \\ 0 \\ 0 \\ 0 \end{pmatrix}$

3. (3 points) True or False: If A, B are both $n \times n$ orthogonal matrices, then so is AB .