

Quiz 7

October 18, 2018

Name (Last, First)

1. (5pts) Find an orthonormal basis of $\text{Span}\{v_1, v_2, v_3\}$ for

$$v_1 = \begin{bmatrix} 1 \\ 1 \\ 1 \\ 1 \end{bmatrix}, v_2 = \begin{bmatrix} -3 \\ 5 \\ 3 \\ 3 \end{bmatrix}, v_3 = \begin{bmatrix} -5 \\ 1 \\ 4 \\ 4 \end{bmatrix}.$$

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2. (5pts) Solve the least-squares problem of $A\mathbf{x} = \mathbf{b}$ for

$$A = \begin{bmatrix} 1 & 5 & 0 \\ 1 & 0 & -3 \\ 0 & 5 & 3 \\ -1 & 5 & -3 \end{bmatrix}, \mathbf{b} = \begin{bmatrix} 2 \\ 5 \\ 6 \\ 6 \end{bmatrix}.$$