

Quiz 7

October 18, 2018

Name (Last, First)

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

$$v_1 = \begin{bmatrix} 1 \\ 1 \\ 1 \\ 1 \end{bmatrix}, v_2 = \begin{bmatrix} 2 \\ 3 \\ -2 \\ 1 \end{bmatrix}, v_3 = \begin{bmatrix} 1 \\ -1 \\ 0 \\ 5 \end{bmatrix}.$$

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

$$A = \begin{bmatrix} 1 & -6 \\ 1 & -2 \\ 1 & 1 \\ 1 & 7 \end{bmatrix}, \mathbf{b} = \begin{bmatrix} -1 \\ 2 \\ 1 \\ 6 \end{bmatrix}.$$