

MATH 335 Quiz 11

Name: _____

Show all work. 5 points each.

1. Let W be the subspace spanned by $\begin{bmatrix} 3 \\ 9 \\ -6 \end{bmatrix}$ and $\begin{bmatrix} 15 \\ 3 \\ 12 \end{bmatrix}$. Write $\begin{bmatrix} 3 \\ 9 \\ 15 \end{bmatrix}$ as the sum of a vector in W and a vector orthogonal to W .

2. Find a least squares solution to $A\mathbf{x} = \mathbf{b}$ where $A = \begin{bmatrix} -1 & 2 \\ 2 & -3 \\ -1 & 3 \end{bmatrix}$ and $\mathbf{b} = \begin{bmatrix} 4 \\ 1 \\ 2 \end{bmatrix}$