

Solve the problems and get your answer in final form. Then copy your solutions **neatly written** onto this form.

1. Let $A = \begin{bmatrix} 1 & 2 & 1 \\ -2 & 0 & -2 \\ 1 & 3 & 2 \end{bmatrix}$. Use the algorithm on page 167 to determine if A is invertible. If it is, find

A^{-1} . If A is not invertible, explain clearly, using some of the theorems in Section 3.5, how your work shows it is not invertible.

2. Let $D = \begin{bmatrix} 3 & -1 & 1 & -1 \\ -1 & 3 & 1 & -1 \\ 1 & 1 & 3 & 1 \\ -1 & -1 & 1 & 3 \end{bmatrix}$. Find a basis for the columnspace of D . Use what you find and one

of the theorems in Section 3.5 to determine whether D is invertible or not. Write in complete sentences as you justify your answer.