Worksheet - Lecture 9

Solving For A Matrix Inverse

1. Find the inverse of the following matrices, using the method of Gauss-Jordan Elimination to solve the matrix equation $\mathbf{A}\mathbf{A}^{-1} = \mathbf{I}$.

   a. $\mathbf{A} = \begin{pmatrix} 1 & 2 & 2 \\ 2 & 2 & 2 \\ 2 & 2 & 1 \end{pmatrix}$

   b. $\mathbf{A} = \begin{pmatrix} 1 & 0 \\ 2 & 2 \end{pmatrix}$

2. What is the inverse of a full rank diagonal matrix,

$$\mathbf{D} = diag\{d_{11}, d_{22}, \ldots, d_{nn}\}$$

   where each diagonal element, $d_{ii} \neq 0$?