

Scratch

September-08-10
7:28 AM

Suppose $A \in M_{n \times (n-1)}$. What can I say about the relationship between $(A|b_1)^{-1}$ & $(A|b_2)^{-1}$, given also that $(A|b_1|b_2) \begin{pmatrix} 1 \\ \vdots \\ 1 \end{pmatrix} = 0 \begin{matrix} \vdots \\ \vdots \\ 0 \end{matrix}$?

$$(A|b_2) = (A|b_1) \begin{pmatrix} 1 & & & & & -1 \\ & 1 & & & & -1 \\ & & \ddots & & & -1 \\ & & & 1 & & -1 \\ & & & & & -1 \end{pmatrix} \quad \text{so} \quad (A|b_2)^{-1} = \begin{pmatrix} 1 & & & & & 1 \\ & 1 & & & & 1 \\ & & \ddots & & & 1 \\ & & & 1 & & 1 \\ & & & & & 1 \end{pmatrix} (A|b_1)^{-1}$$
$$\begin{pmatrix} 1 & -1 \\ 0 & -1 \end{pmatrix} \begin{pmatrix} 1 & -1 \\ 0 & -1 \end{pmatrix}$$