

Problem 1. Find a basis for the null space of the following matrix:

$$\begin{pmatrix} 1 & 1 & 5 & 0 & -3 \\ 1 & 2 & 8 & 0 & -7 \\ -2 & 0 & -4 & 1 & 0 \\ 2 & -1 & 1 & 0 & 6 \end{pmatrix}$$