Item Navigation

Fundamental Matrix Subspaces

Find a basis for the column space, row space, null space and left null space of the four-by-five matrix A, where

$$\mathrm{A} = \begin{pmatrix} -2 & -3 & -1 & -1 & -2 \\ -1 & -1 & -0 & -1 & -1 \\ -1 & -2 & -1 & -1 & -1 \\ -1 & -2 & -3 & -1 & -3 \end{pmatrix}.$$

Check to see that null space is the orthogonal complement of the row space, and the left null space is the orthogonal complement of the column space. Find $\mathrm{rank}(\mathrm{A})$. Is this matrix of full rank?