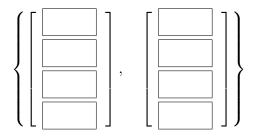
Let

$$\vec{u} = \begin{bmatrix} -1 \\ 4 \\ 1 \\ -4 \end{bmatrix}, \quad \vec{v} = \begin{bmatrix} 1 \\ -3 \\ -1 \\ -4 \end{bmatrix},$$

and let W the subspace of \mathbb{R}^4 spanned by \vec{u} and \vec{v} . Find a basis of W^{\perp} , the orthogonal complement of W in \mathbb{R}^4 .



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