$$A = \begin{bmatrix} 1 & -2 & -1 & 0 \\ 0 & 1 & 3 & -2 \\ -2 & 3 & -1 & 2 \end{bmatrix}, \mathbf{u} = \begin{bmatrix} 1 \\ 1 \\ -1 \\ 1 \end{bmatrix}, \mathbf{v} = \begin{bmatrix} 1 \\ 0 \\ 1 \\ 2 \end{bmatrix}, \mathbf{w} = \begin{bmatrix} 2 \\ 0 \\ 2 \\ 3 \end{bmatrix}$$