

Solution (#921) Take

$$P = \begin{pmatrix} 1 & 1 \\ -1 & 2 \end{pmatrix} \quad \text{and} \quad D = \begin{pmatrix} -8 & 0 \\ 0 & 1 \end{pmatrix}.$$

Take

$$E = \begin{pmatrix} -2 & 0 \\ 0 & 1 \end{pmatrix} \quad \text{and} \quad N = PEP^{-1} = \begin{pmatrix} -1 & 1 \\ 2 & 0 \end{pmatrix}.$$