

Let

$$A = \begin{bmatrix} -3 & 3 \\ -14 & 10 \end{bmatrix}.$$

Find two different diagonal matrices D and the corresponding matrix S such that $A = SDS^{-1}$.

$$D_1 = \begin{bmatrix} \boxed{} & 0 \\ 0 & \boxed{} \end{bmatrix}, \quad S_1 = \begin{bmatrix} \boxed{} & \boxed{} \\ \boxed{} & \boxed{} \end{bmatrix}.$$

$$D_2 = \begin{bmatrix} \boxed{} & 0 \\ 0 & \boxed{} \end{bmatrix}, \quad S_2 = \begin{bmatrix} \boxed{} & \boxed{} \\ \boxed{} & \boxed{} \end{bmatrix}.$$

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$$D_1 = \begin{bmatrix} \boxed{3} & 0 \\ 0 & \boxed{4} \end{bmatrix}, \quad S_1 = \begin{bmatrix} \boxed{-1} & \boxed{-3} \\ \boxed{-2} & \boxed{-7} \end{bmatrix}.$$

$$D_2 = \begin{bmatrix} \boxed{4} & 0 \\ 0 & \boxed{3} \end{bmatrix}, \quad S_2 = \begin{bmatrix} \boxed{-3} & \boxed{-1} \\ \boxed{-7} & \boxed{-2} \end{bmatrix}.$$