

Find general solutions of the following system. The eigenvalues of the coefficient matrix A are given.

$$\vec{x}' = \begin{bmatrix} 2 & 0 & 0 \\ -7 & 9 & 7 \\ 0 & 0 & 2 \end{bmatrix} \vec{x}, \quad \lambda = 2, 2, 9$$