The eigenvalues of $\begin{bmatrix} 2 & 4 \\ 3 & 1 \end{bmatrix}$ are $\lambda_1 = -2$ and $\lambda_2 = 5$. (You do not need to check this.)

Find the general solution to the differential equation

$$x' = \begin{bmatrix} 2 & 4 \\ 3 & 1 \end{bmatrix} x.$$