Solve the linear homogenous system x’ =Ax give by

$[ \begin{matrix}x\_{1}\\x\_{2}\end{matrix}]$ ‘ =$\left[\begin{matrix}5&-1\\3&1\end{matrix}\right]$ [ $\begin{matrix}x\_{1}\\x\_{2}\end{matrix}]$ with [$\begin{matrix}x\_{1}\\x\_{2}\end{matrix}]$ (0) = [$\begin{matrix}2\\-1\end{matrix}]$

By determining the following:

1. The eigenvalues of A
2. The eigenvectors of A
3. Write the general solution of x’ =Ax