Show steps, explain what you do. Use the four sheet summary only.

1. Calculate the Kernel for the linear transformation \( T : \mathbb{R}^3 \rightarrow \mathbb{R}^2, \ T(x, y, z) = (2x + 3y - z, -x + 4y + 6z). \) Show the transformation matrix and the Kernels as parameterized vectors.

2. Calculate the eigenvalues and eigenvectors of \[
\begin{bmatrix}
0 & 1 \\
-5 & -6
\end{bmatrix}
\]