

Name:

Linear Algebra II - Quiz 11

All the solutions should be properly justified and explained. Clarity of the presentation will also be rewarded.

The maximal number of points awarded is 10.

Let $a \in \mathbb{R}$. Find the eigenvectors and eigenvalues of the following matrix, and give the algebraic and geometric multiplicity of each eigenvalue:

$$M = \begin{bmatrix} a & 1 \\ -1 & a+2 \end{bmatrix}.$$