
1 Eigenvalues and Eigenvectors

Learning Outcomes

After completing this chapter, students should be able to do the following.

- Define eigenvalues and eigenvectors geometrically.
- Use characteristic polynomials to compute eigenvalues and eigenvectors.
- Define algebraic multiplicity and geometric multiplicity.
- Utilize properties to show that two matrices are not similar.
- Use eigenvectors of matrices, when possible, to diagonalize a matrix.
- Plot the Gershgorin region of a matrix.
- Implement the Power Method and its variants.