

Textbook: *Linear Algebra with Applications*, 4th Edition, by Bretscher, published by Prentice Hall.

Recommended Problems

- 1.1 Linear systems of equations. 5, 7, 15, 19, 21, 23, 40, 47.
- 1.2 Matrices, vectors, and Gauss-Jordan elimination. 1, 5, 21, 29, 31, 33, 35, 63.
- 1.3 Number of solutions of a linear system. Matrix algebra. 1, 3, 9, 14, 37, 51, 55, 59.
- 2.1 Linear transformations and their inverses. 5, 6, 11, 13, 17, 36, 43, 44.
- 2.2 Transformations in Euclidean geometry. 6, 7, 19, 21, 27, 37, 38.
- 2.3 The inverse of a linear transformation. 5, 11, 19, 28, 29, 41, 52, 53, 67, 69, 76, 84, 91.
- 2.4 Matrix multiplication. 4, 13, 15.
- 3.1 Image and kernel of a linear transformation. 5, 7, 15, 31, 33.
- 3.2 Bases and linear independence. 3, 6, 15, 29, 33, 46.
- 3.3 The dimension of a subspace. 19, 23, 27, 29, 35, 67, 69.
- 3.4 Coordinates. 7, 9, 21, 25, 43, 50, 55, 59.
- 4.1 Introduction to linear spaces. 1, 3, 7, 9, 23, 27, 31, 39, 47, 49.
- 4.2 Linear transformation and isomorphisms 3, 5, 13, 25, 29, 45, 47, 51, 53, 71, 78
- 4.3 The matrix of a linear transformation. 1, 5, 9, 17, 21, 27, 43, 47, 49.
- 5.1 Orthogonal projections and orthonormal bases. 3, 7, 15, 27, 41, 45.
- 5.2 The Gram-Schmidt process and QR factorization. 3, 7, 13, 19, 29, 33, 37.
- 5.3 Orthogonal transformations and orthogonal matrices. 3, 13-25 (odd), 35, 37, 41, 53, 55.
- 5.4 Introduction to least squares and data fitting. 5, 19, 21, 25, 31.
- 5.5 Inner Product Spaces 3, 5, 11, 12, 14, 15, 23, 27, 31.
- 6.1 Introduction to determinants. 5, 9, 17, 21, 27, 29, 33.
- 6.2 Properties of the determinant. 3, 15, 17, 25, 35, 51, 57.
- 6.3 Geometric interpretation of the determinant. 1, 3, 7, 14, 23, 31.
- 7.1 Discrete dynamical systems 1, 3, 5, 7, 13, 15, 19, 35, 51, 53.
- 7.2 Finding the eigenvalues of a matrix. 1, 5, 9, 11, 17, 23, 31, 33, 39, 43.
- 7.3 Finding the eigenvectors of a matrix. 3, 5, 15, 25, 27, 31, 35.
- 7.4 Diagonalization 7, 15, 25, 31, 35, 39.
- 8.1 Symmetric Matrices 3, 5, 11, , 12, 17, 23, 25, 37, 43.
- 8.2 Quadratic Forms 5, 7, 9, 17, 19, 21, 23, 29, 37, 41.
- 8.3 Singular Values 5, 13, 18, 25, 29.