

MATH 2360-D01 WEEK 15

SECTION 7.3; PAGES 362–371

ABSTRACT. A symmetric matrix is one that is its own transpose. Such matrices are always diagonalizable, and one can even find an orthonormal basis of eigenvectors.

SECTION 7.3

Reading. Make sure that you understand the following:

- (1) What symmetric and orthogonal matrices are.
- (2) That eigenvectors corresponding to different eigenvalues for a symmetric matrix are not only linearly independent but orthogonal.
- (3) How to perform orthogonal diagonalization of a symmetric matrix.

Suggested problems. To verify that you have understood the material, solve the following problems at the end of the section: 3, 13, 27, 41, and 47.