

Definitions for Exam #3

Math 2270, Fall 2006

Define the following notions and give an example of each.

Chapter §6.

- (1) (6.2.11) Determinant of a linear transformation.
- (2) (6.3.2) Rotation matrices.
- (3) (6.3.6) m -Parallelepiped in \mathbb{R}^n .
- (4) (6.3.6) m -Volume of an m -parallelepiped.

Chapter §7.

- (1) (7.1.1) Eigenvalue and eigenvector.
- (2) (7.2.1) Characteristic polynomial.
- (3) (7.2.3) Trace of a square matrix.
- (4) (7.2.6) Algebraic multiplicity of an eigenvalue.
- (5) (7.3.1) Eigenspace.
- (6) (7.3.2) Geometric multiplicity of an eigenvalue.
- (7) (7.3.3) Eigenbasis.
- (8) (7.4.2) Diagonalizable matrices.
- (9) (7.4.6) Eigenvalue, eigenfunction and eigenbasis of a linear transformation.
- (10) (7.4.6) Diagonalizable transformation.