MA1201 Linear Algebra and Geometry

Norwegian University of Science
and Technology
Department of Mathematical
Sciences

Exercise set 11

Compulsory exercises

Hand in your solutions to these exercises. All answers must be justified.

Chapter 7.1 - Orthogonal matrices

Exercise 1 Do exercise 1 in chapter 7.1 of Elementary Linear Algebra.

Exercise 2 Do exercise 26 in chapter 7.1 of Elementary Linear Algebra.

Chapter 7.2 - Orthogonal diagonalization

Exercise 3 Do exercise 1 and 3 in chapter 7.2 of Elementary Linear Algebra.

Exercise 4 Find an orthogonal matrix P that orthogonally diagonalizes A and verify that $P^T A P$ is diagonal, where A is the matrix in exercise 1 in chapter 7.2 of Elementary Linear Algebra.

Exercise 5 Do exercise 19 and 20 in chapter 7.2 of Elementary Linear Algebra.