



Norwegian University of Science  
and Technology  
Department of Mathematical  
Sciences

# MA1201 Linear Algebra and Geometry

## Exercise set 10

### Compulsory exercises

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

#### Chapter 4.7 - Change of basis

**Exercise 1** Do exercise 1 in chapter 4.7 of Elementary Linear Algebra.

**Exercise 2** Do exercise 5 in chapter 4.7 of Elementary Linear Algebra.

#### Chapter 5.2 - Diagonalization

**Exercise 3** Do exercise 8 in chapter 5.2 of Elementary Linear Algebra.

**Exercise 4** In example 6 on page 307 it is shown that if  $A = PDP^{-1}$  then  $A^k = PD^kP^{-1}$ . Use this to compute  $A^5$ , where  $A$  is the matrix from the previous exercise.

**Exercise 5** Do exercise 10 in chapter 5.2 of Elementary Linear Algebra.