

# Exercises, lecture 4

26. februar 2009

**Exercise 1** Problem 22.5.13 in the book.

**Exercise 2** Problem 22.5.14 in the book.

**Exercise 3** Find the coefficient of determination for the data used in the previous two exercises.

**Exercise 4** Matlab exercise:

1. Download the data file `icecream.txt` from:  
<http://www.math.aau.dk/~rubak/teaching/2010/nano4/data/>  
(right click on the file and save it to your computer)
2. Load data into Matlab using the command `x = tblread('icecream.txt')` (Remember to have the file in the working directory.)
3. Make a plot of the first column of the data against the second column (use `scatter`). Matlab hint: the first column of `x` is selected with `x(:,1)`. Is there a linear trend?
4. The first column is the daily consumption of icecream in June and the second column is the daily temperature in June.
5. Estimate the regression parameters using the formulas in the slides/book.
6. Is there a significant influence of the temperature? What is the  $p$ -value for the influence?
7. Find confidence intervals for both regression parameters.
8. Calculate the coefficient of determination.

**Exercise 5** Try to solve the above questions using the Matlab functions `regress` and `regstats`. Use the help menu to find out how they work.

**Exercise 6** Unfinished exercises from previous lectures.