

## Second set of obligatory assignments for DM528 Fall 2010\*

November 29, 2010

It is allowed (and strongly encouraged!) to work in groups of up to 3 and hand in one report per group. **Different groups are NOT allowed to collaborate!** Your reports must be handed in to the instructor Magnus Find on Wednesday December 15st. Magnus will return the corrected reports on December 20. Approval of your report will depend on how well you answer the problems. It is not necessary to answer everything correctly in order to pass, but it must be clear that you have worked seriously on each problem and come up with a number of relevant ideas and partial solutions. **Note that this time there will be no possibility for a second hand in so you must get it right the first time!**

For each of the problems you should explain what you do and which methods/results from the book you use or argue directly why your solution is correct.

Solve the following problems (They are available from the course page):

1. January 2009, problem 1.
2. January 2010, Problem 2.
3. January 2010 Problem 3. For example the permutations  $(3,4,5,1,2)$  and  $(3,1,2,5,4)$  are such legal permutations of  $\{1, 2, 3, 4, 5\}$ , but  $(1,3,4,2,5)$  is not since  $\pi_2 - \pi_1 = 3 - 1 = 2$ .
4. January 2010 Problem 4.

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\*Recall that it is required to have both this and the first obligatory assignment approved in order to attend the written exam in January.