

## Homework 8

**Due: November 3, 2009, beginning of the class**

PLEASE READ THE INSTRUCTIONS/SUGGESTIONS WRITTEN IN THE SYLLABUS!  
ALL PROBLEMS ARE FROM THE 3<sup>rd</sup> EDITION OF THE TEXTBOOK.  
(GHAHRAMANI: FUNDAMENTALS OF PROBABILITY)

- Hand in the following problems:
  - *Page 238-239*: 2, 3
  - *Page 254-255*: 1, 4
  - *Page 266*: 2, 7
  - *Page 325-326*: 1, 2, 4, 5
- Practice problems (you do not need to hand these in!):
  - *Page 238-239*: 1, 4, 5
  - *Page 254-255*: 2, 5, 6
  - *Page 266*: 1, 6
  - *Page 325-326*: 3, 6, 7
- Bonus problem:  
Compute  $\mathbf{E}e^{tX}$  and  $\mathbf{E}e^{tX^2}$  if  $X$  is a standard normal random variable and  $t$  is a fixed real number.

DISCLAIMER: It is easy to find the solutions to (some of) these questions. (E.g. the internet, your fellow classmates ...) However, do NOT consult any of these solutions when working on this assignment or you will learn nothing from it and your chance of passing the course will be greatly diminished. If it becomes apparent to the grader that your solution is copied from existing solutions, you will be assigned a grade of zero for lack of originality.