Math 447 - Spring 2025 - Homework 10

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Status - Reading Assignments:

Here are the reading assignments to be completed before the first one of this HW.

WMS (Wackerly, et al. Textbook):
    ch.2 - ch.4.7 (skip 3.10)

MF447 lecture notes:
    ch.1 - ch.5, ch.6 (skim), ch.7 - ch.10.7

Other:
    Nothing assigned yet

New reading assignments:

> Really important for the WMS reading assignments: Work through the examples!

Reading assignment 1 - due: Monday, March 24:

  a. Carefully read MF ch.10.8 and WMS ch.4.10 (Markov and Tchebysheff inequalities). Most of that material was already discussed in lecture. Work through all examples! Skip WMS ch.4.11.

  b. Carefully read MF ch.11.1 and 11.2.

  c. IMPORTANT: Review MF ch.5.3 (Random Elements and their Probability Distributions) before you start reading MF ch.11.3! I will use that material to streamline the ch.11 presentation of independence and conditioning!

Reading assignment 2 - due: Wednesday, March 26:

  a. Carefully read MF ch.11.3 - 11.6. Work through all examples!

  b. Carefully read WMS ch.5.2 and 5.3. Work through all examples!

Reading assignment 3 - due Friday, March 28:

  a. Carefully read MF ch.11.7. Strongly recommended: At a minimum, skim the optional ch.11.7.1! Work through all examples!

  b. Carefully read WMS ch.5.4 - 5.8. Work through all examples!

> **General note on written assignments:** I will not collect those assignments for grading but doing them might be helpful for your quizzes and exams. Be sure to work the examples!

Written assignments are on the next page.

(a) Work closed book through the examples given in the assigned reading, both in MF and WMS. You should have noticed by now what I announced earlier:
The WMS examples become disproportionately more important in the application oriented course material.

(b) ⊡ Be sure you can apply the Tchebysheff inequalities! ⊡ Understand the increased complexity when dealing with a vector of two (or even more) random variables: Unless the are independent, conditioning significantly increases the technical difficulty.

(d) All WMS exercises below are odd-numbered, so the solutions are in the book.
- WMS ch.4.6 exercises: #4.6.081, 4.6.091, 4.6.109
- WMS ch.4.9 - 4.10 exercises: #4.9.145, 4.10.147, 4.10.151
- WMS ch.5.2 exercises: #5.1, 5.3, 5.5, 5.7, 5.11, 5.15
- WMS ch.5.3 exercises: #5.19, 5.21, 5.23, 5.25, 5.33,
- WMS ch.5.4 exercises: #5.45, 5.51, 5.63, 5.71,

Selected answers:

None, since all answers to **(a)** can be found in WMS and the lecture notes.