

Math 447 - Fall 2024 - Homework 07

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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.1 - 3.8

MF447 lecture notes:

Ch.1 - 3, ch.4 (non-optional parts), ch.5, ch.6 (strong students), ch.7 - 9

Other:

Nothing assigned yet

New reading assignments:

Important: Work through the examples of the WMS reading assignments!

Reading assignment 1 - due Monday, September 30:

- Carefully read WMS ch.3.9 and 3.11. Again, the examples are important!
- Skim WMS ch.3.10. Probability generating functions will not be part of this course.
- Carefully read MF ch.10.1 and 10.2

Reading assignment for the break:

- If you have been struggling to keep up with the material, use the break to catch up. Strong students: Do you see how the material of MF ch.6.5 (Expectation and Variance as Probability Measure Integrals) fits the definitions given here?
- If you managed to keep pace, see what you can do with MF ch.6.2 - 6.5. Ch.6.1 focuses on the role of σ -algebras, and those are not essential to understand the remainder of ch.6. Just assume that everything is measurable, i.e., $\mathfrak{F} = 2^\Omega$.

General note on written assignments: I will not collect those assignments for grading but doing them might be helpful for your quizzes and exams.

(a) Write from memory the following definitions and compare them with the MF lecture notes:

- Really important:** moments about the origin, central moments, MGF, how to obtain μ'_k from the MGF.
- ALL definitions of MF ch.10.1 and 10.2. Quantiles need getting used to if the CDF F_Y is not bijective!
- Understand how integration of the PDF gets you the CDF of a continuous random variable.

(b) All WMS exercises below are odd-numbered, so the solutions are in the book.

- WMS ch.3.5 exercises: #3.67, 3.73, 3.75
- WMS ch.3.7 exercises: #3.103, 3.105, 3.117
- WMS ch.3.8 exercises: #3.121, 3.127, 3.135
- WMS ch.3.9 exercises: #3.145, 3.147, 3.153