Math 447 - Spring 2024 - Homework 04

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Status - Reading Assignments:

Here are the reading assignments you were asked to complete before the first one of this HW.

WMS (Wackerly, et al. Textbook):   ch.1 - 2

MF447 lecture notes: Ch.1 - 5

Other: Nothing assigned yet

New reading assignments:

Reading assignment 1 - due Monday, February 5:
- a.   Carefully read MF ch.6.1 - 6.3.
- b.   Carefully read WMS ch.3.1 - 3.4.

Reading assignment 2 - due Wednesday, February 7:
- a.   Carefully read the remainder of MF ch.6.
- b.   Carefully read WMS ch.3.5 - 3.8.

Reading assignment 3 - due Friday, February 9:
- a.   Carefully read the non–optional remainder of WMS ch.3: ch.3.9 and ch.3.11.
- b.   Carefully read MF ch.7.1 and 7.2.

Written assignments - Not collected for grading:

> Remember that **some of those assignments will be relevant for the quizzes and exams.**

(a) Write from memory the following definitions and compare them with the MF lecture notes:
- multiplication rule for 2–stage selections and for k–stage selections
- number of permutatioms $P_k^n = \ldots$; number of combinations $\binom{n}{k}$; formulas for P_k^n, $\binom{n}{k}$, $\binom{n}{n_1, \cdots, n_k}$
- "permutations of size k relate to elements $(\omega_1, \omega_2, \ldots, \omega_k)$ of Ω^r with distinct ω_j, whereas combinations relate to subsets $\{\omega_1, \omega_2, \ldots, \omega_k\}$ of Ω." What does that mean?
- conditional probability; generalized multiplication rule
- independence of $2, 3, n$, any number of events

(b) Combinatorics will play a big role not only in the first midterm, but also later in the course, when we are finished with MF ch.4:
- Try to solve closed book as many of the fully worked examples in MF ch.4 and WMS ch.2.6 as possible. Do not skip the complicated ones. They are indicative of what to expect in the major exams and even some quizzes!

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

- WMS ch.2.9 exercises: #2.111, 2.113, 2.115, 2.117
- WMS ch.2.10 exercises: #2.125, 2.129, 2.131, 2.135

Selected answers: Available in WMS and the MF lecture notes.