

Math 339SP, Fall 2025 — Homework 3

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Due September 25 at 5:00 pm

Instructions. This problem set contains problems mostly from Week 3 of class. The problem numbers refer to our textbook, *Introduction to Stochastic Processes with R* by Robert P. Dobrow.

Problem 1. Please do the following textbook problems: Exercises 3.1, 3.2, 3.3, 3.5, 3.7, 3.8, 3.10, 3.11a, 3.12

Remark 1. Despite the textbook saying not to use technology, you may use R to solve the linear system of equations you come across in Exercise 3.1.

Remark 2. You may cite a result from Homework 2 in your proof for Exercise 3.2.

Remark 3. You may cite a result from this homework in your work for Exercise 3.7.

Remark 4. You may not use technology at all to justify your answers in Exercise 3.8. You may use the formula derived in Example 3.1.

Remark 5. Make sure to read Example 3.8 before doing Exercise 3.11a.