Homework 11
Math 262
due 5:00pm on Monday, April 11

Write your solutions to the following problems clearly and neatly. Make sure to explain your reasoning and provide mathematical details that support your answers. For a few tips on writing solutions, see this helpful guide for mathematical writing.

You may write or type your solutions electronically, or write them on paper and scan or photograph them. Upload a single file containing your solutions to the Homework 11 assignment on Moodle.

When you use technology to evaluate probabilities in your solutions, please write a few words indicating what you computed.

Book Problems

- Section 3.3 #47, 55, 68, 70 (pages 182–187)

- Section 3.4 #71, 74, 75ab, 76ac, 77, 79 (pages 194–196)

Additional Problem

A roll of copper wire has flaws that occur according to a Poisson process with a rate of 1.5 flaws per meter. The *distance between successive flaws* is then exponentially distributed with parameter $\lambda = 1.5$. Find the following:

(a) The mean and variance of the distance between successive flaws on the wire

(b) The probability that the distance between a randomly selected flaw and the next flaw is at least a meter

(c) The probability that the distance between a randomly selected flaw and the next flaw is between 0.5 and 1.5 meters