

Homework 8

Math 262

due at classtime on Tuesday, November 15

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 8](#) assignment on Moodle.

Book Problems

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