Homework 4
Math 262
due 5:00pm on Monday, Febraury 28

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 4 assignment on Moodle.

Book Problems

- Section 1.4 #76 (page 42)

- Section 1.5 #81, 88, 91, 93 (pages 47–50)

    Note: #88 has two possible answers

- Section 1.6 #101a (page 56)

    You may do this simulation in R, Mathematica, or your favorite programming language.

Additional Problems

1. Show that $\binom{n}{k} = \binom{n-1}{k-1} + \binom{n-1}{k}$, where $1 \leq k \leq n$.

2. A total of n independent tosses of a coin that lands on heads with probability p are made. How large need n be so that the probability of obtaining at least one head is at least $\frac{1}{2}$? (The answer depends on p, of course.)