APPM 3570/STAT 3100 Spring 2019 Homework 7 - Due Mar. 6

- Chapter 4, Problems 52, 53, 55, 60, 65, 75.

- Chapter 4, Theoretical Exercises 19, 27.

- (Numerical exercise) Let

$$f(i) = \binom{n}{i} p^i (1-p)^{n-i}$$

  be the PMF for a Binomial Random Variable with parameters (n, p) and

$$g(i) = \frac{\lambda^i}{i!} e^{-\lambda}$$

  be the PMF for a Poisson random variable with parameter $\lambda = np$. Plot both $g(i)$ and $f(i)$ for $n = 100$ and $p = 0.3, 0.1, 0.02$. Make three different plots, each showing both $g(i)$ and $f(i)$ as a function of i for a different p. Choose a plotting range where you can see how good an approximation $g(i)$ is to $f(i)$. Discuss your results.

Note, as with all homework sets in this class, that you may discuss the homework problems with your classmates. However, the work you turn in must be your own – you should write your solutions on your own. Identical solutions will be considered as a violation of the Student Honor Code. Furthermore, **no work equals no credit.** Your homework should be neatly written or typed and stapled.

On the front of your homework clearly print your:

- First Name and Last Name

- Lecture number (either Section 001 or Section 002) and homework number.

- Draw a **blank grading table** with room for 3 problems, format points and a total:

Question	Points
Format	
Total	

- Points will be deducted if these instructions are not followed.

Remember that writing style, clarity, and completeness of explanations are always important. Justify your answers.