Problem set 3

Online S520

Upload your answers through the Assignments tab on Canvas

1. (9 points) Trosset chapter 4.5 exercise 1.
2. (9 points) Trosset chapter 4.5 exercise 3.

   Note for the above TWO problems:

   - You are not required to include the graph of PMF or CDF in this question.
   - Remember to include all values when you list the probabilities in a PMF.
   - Be careful when you indicate the end points of the ranges in the CDF. Should an "=" be included?

3. (3 points) Trosset chapter 4.5 exercise 10.
4. (6 points) Trosset chapter 4.5 exercise 14.

   (Note for the above TWO problems: Be careful about the inequality in the probability, $P(Y < y) \neq P(Y \leq y)$ for a discrete random variable Y.)

5. (3 points) R tutorial and exercise: use `source` to execute commands from a file.

   If commands are stored in an external file, say commands.R or myRfunction.txt in the working directory, they may be executed at any time in an R session with the command.

   ```
   > source("commands.R") or > source("myRfunction.txt")
   ```

   (a) Download the file "dbinom.txt" from Canvas/Files/S520 R codes, and modify the file with your name and initials.

   (b) In R/RStudio, use the `source` function to execute the commands in "dbinom.txt".

   (c) Check if you can see your function in the workspace by typing

   ```
   > objects()
   ```

   For example, I should see my function "dbinom.jw" in my workspace. If you cannot find yours, please check the directory you source from is the same one where you saved the file.

   (d) Use your dbinom function to compute a probability that a binomial random variable with n and p takes a value of x. Choose your own values. For example,

   ```
   > dbinom.jw(8, 12, 0.4)
   ```

   (e) Compare the result with the output from the R generic function "dbinom(x, n, p)".

   (f) Take a screenshot of all the R outputs.

   (g) Submit the picture with the other homework problems.