Pre-class preparation

Please read the following textbook sections from Blitzstein and Hwang's *Introduction to Probability* (second edition):

- Section 1.8
- If you've never used R or RStudio, or would like a refresher, please go through the following:
  - Sections 3.1 and 3.4 (including their subsections) of Ismay and Kennedy's *Getting Used to R, RStudio, and R Markdown*: `https://ismayc.github.io/rbasics-book/3-rstudiobasics.html`

Objectives

By the end of the day's class, students should be able to do the following:

- Explain the difference between R and RStudio, and identify the four components of the RStudio interface.
- Create and use vectors, draw random samples, and perform simple simulations using R in RStudio.

Reflection Questions

Please submit your answers to the following questions to the corresponding Canvas assignment by 7:45AM:

Note: if items 2-6 or 10 in the following are unfamiliar, please watch the accompanying videos found on the course website which will walk you through creating a new R Markdown document and subsequently knitting it.

1. Download R and RStudio by following the instructions on the course website.
2. On your Desktop, create a new folder called 'STAT 310'.
3. Create a new R Markdown file with the title 'STAT 310 Activity' and your name as the author.
4. Save this file as `STAT_310_09_19.Rmd` to your new STAT 310 folder.
5. Delete everything from line 12 onwards. (This is default text.)
6. On line 12, insert a new R code chunk by clicking on the green (+C) button at the top of the pane and selecting the 'R' option.

7. In this new code chunk, type the following:

```
1 + 2*(3 - sqrt(4/5)) + log(6) - exp(0^8)
```

   then run the code chunk (either by using the green arrow in the upper right of the chunk or `Cntr+Enter` on Windows, `Cmd+Return` on Mac.

8. Create a new code chunk below the previous one. Type and run the following:

```
x <- c(1,3,5,7)
y <- 1:4
x
y
x + y
sum(x)
mean(y)
```

9. Create a new code chunk below the previous one. Type and run the following:

```
n <- 4
sample(x, n)
sample(x, n, replace = T)
```

10. At the top of the pane, click the drop-down arrow next to the blue Knit button and select 'Knit to PDF'. If this causes an error, then instead choose 'Knit to HTML'. A new PDF (or HTML) file will be created in the STAT 310 folder.

11. Upload this PDF to Gradescope. It you knitted to HTML, convert it to PDF before uploading to Gradescope.

12. (Optional) Is there anything from the pre-class preparation that you have questions about? What topics would you like would you like some more clarification on?