Homework 4

STAT 625 Fall 2022

Due October 4, 2022, 12:30pm

1 Reading

- Read Chapter 5 of the text.

2 Primary Questions:

Turn these in for your homework, or substitute some of the challenge questions below.

   hint several of these problems may be easier to write by hand. If you have a way to capture your writing electronically with another application, you may include imported graphics in your knitted file using syntax like:

```
'''{r foo, out.width="100%", fig.cap="An example image."}
knitr::include_graphics("foo.pdf")
'''
```

1. Weisberg problem 4.2 (3 parts) (you should fit the 4 models with software, then answer the parts)

2. Wesiberg problem 4.6 (1 part)

3. Wesiberg problem 4.7 (1 part)

4. Wesiberg problem 4.9 (2 part)

5. Weisberg problem 4.13 (1 part)

3 Challenge questions:

6. Wesiberg problem 4.3 (2 parts)

7. Wesiberg problem 4.8 (1 part)

8. Weisberg problem 4.10 (1 part)

4 Extra Credit question:

   (worth extra credit on homework score equal to the number of points you would get per part of a standard homework problem. Also a good question to get help on from the R tutoring center!)

9. Weisberg problem 4.11 (5 parts) (hint for a: the joint distribution is bivariate normal, which is parameterized by the means and the variances of each of x and y, along with their covariance. The wikipedia page for covariance computation and for multivariate normal distributions (subsections on bivariate normal, and conditional bivariate normal) will also be helpful).

5 Pre-lecture Check

Complete this week's timed pre-lecture check on **gradescope**.