

Assignment 4

Due: Thursday October 11

1. Please do the following exercises from ‘Applied Multivariate Statistical Analysis’ by Johnson and Wichern. Next to each exercise there is an **H** and/or **R**, indicating whether the exercise should be done **by hand [H]** and/or **by R [R]**. **Make sure to show details for all derivations.**

- 4.6 [**H**]

- Additionally, generate 100 samples in R from the multivariate normal distribution of \mathbf{X} and plot them with the `pairs()` command.

- 4.7 [**H**]

- Why are the answers from (a) and (b) the same?

- Additionally, generate 100 samples from the univariate normal conditional distribution when $X_3 = 2$ and plot the density of the samples. Do this for $X_3 = -2$ as well.

- 4.10 [**H**]

- 4.11 [**H**]

- 4.12 [**H**]

- 4.13 [**H**]

- 4.16 [**H**]

2. Extra Credit — these can be turned in any time up to the date of the final exam.

- 4.8 [**H**]

- 4.9 [**H**]