

# STAT 205, Spring 2015

## Homework 1

**Out: Thur January 20. Due in: Thur January 27, in class**

Consider the data of 2.2.4 (p. 39). The data are counts of the number of dendritic segments coming out of  $n = 36$  nerve cells; they are in a form to be loaded into R on the course webpage (in `segments.txt`) and you should copy and paste the command into R. On **one side of one sheet of paper** include a boxplot and histogram of the data. I want you describe the data set using the terms we used in class. Please word-process your writeup.

Use the following command to upload the data in R:

```
segments=c(23,30,54,28,31,29,34,35,30,27,21,43,51,35,51,49,35,24,26,29,21,29,37,27,28,
33,33, 23,37,27,40,48,41,20,30,57)
```

Be sure to include the following:

- A qualitative description of the data based on the histogram, including modality, symmetry, and skewness.
- Which, if any, observations are outliers as defined in class; the boxplot is useful here.
- Measures of central tendency (mean and median) and note whether the mean is pulled further than the median in the direction of skew (if the distribution is skewed).
- Report the five-number summary, the IQR, and the range. Note that you can obtain Q1 as `quantile(segments, 0.25)` and Q3 as `quantile(segments, 0.75)`. You may also use `min(segments)` and `max(segments)`.