Use R for all calculations and graphics. Please type your solutions and reduce the size of your graphical displays so that your homework fits nicely on one side of one sheet of paper. Each question is worth 10 points, with more emphasis on the correct and correctly labeled graphical displays.

Consider the data from Exercise 2.2.4 of the text. A dendritic tree is a branched structure that emanates from the body of a nerve cell. As part of a study on brain development, 36 nerve cells were taken from the brains of newborn guinea pigs. The investigators counted the number of dendritic branch segments emanating from each nerve cell. Data are:

```
dendr<-c(23, 30, 34, 35, 30, 27, 21, 43, 51, 35, 49, 35, 24, 26, 29, 21, 29, 37, 27, 28, 33, 33, 23, 37, 27, 40, 48, 41, 20, 30, 57)
```

1. **Use R with the command `hist(dendr)`**
   a. **(Answer is an interval)** Using interval notation, indicate the interval of values covered by the bar with the right side marked by “40” and the left at “35”. Your answer should have correct use of the square bracket/parentheses to indicate inclusion/exclusion of endpoints. **Hint: Using the command `sort(dendr)` might help you determine the classes. Also, read the R Help found on the course site!**
   b. **(Answer should be a list of observations and one sentence)** Which observations are included in the very left hand bin (spanning from 20 to 25)? Explain how this conflicts with your answer to (a) and why this is incorrect for an appropriate histogram (in one sentence, please).
   c. Fix the problem identified in (b) by using the “breaks” option in the “hist” function while still maintaining the same class width R used by default (from your answer to (a)). Label your histogram nicely. **Please copy and paste your code used to produce the histogram as well as the graphical display itself. Hint: Read the R Help found on the course site!**
   d. Use your histogram produced in (d) to describe the shape of the distribution (in a few words).

2. **Use R.**
   a. Report the five number summary for these data.
   b. Compute the upper fence and lower fence using the 1.5 x IQR rule for identifying outliers. Show your work (in a succinct manner like HW solutions on course site).
   c. Create a nicely labeled boxplot of these data.
   d. Using the boxplot display and the data, list any observations considered an outlier. Indicate how you arrived at your decision.
   e. Type `boxplot(dendr)$stats`. Open the help file for the boxplot function. Copy and paste the output from `boxplot(dendr)$stats` and identify what each of these values is (If R uses different terminology for something we learned in class, please indicate the word we use).