NAME: _____ SECTION: _____

REGULAR STATISTICS TERM 1 PROJECT

Instructions:

A) Collect 25-30 leaves from one tree.

B) Now, that you have your batch of tree leaves, create 2 separate datasets for each tree that measures the width of the leaves, in inches, and the length of the leaves, in inches. When measuring the leaves, the important thing is just to be consistent on how you decide to measure the widths and lengths.

C) Once you have your two datasets for width and length, complete the following:

***** For this project, use Rweb to construct your graphs. Print out all your graphs and staple them to the back of this handout. Above the graph, label in pen … Graph A, Graph B, etc. so that I can quickly look through your graphs to make sure you have all of them. Answer all non-graph related questions below. Make sure to properly label ALL graphs.**

WIDTH DATA ONLY

1) Using Rweb, sort your width data from least to greatest then list your width data below:

2) Calculate the following for your width data:

a) Mean:
b) Median:
c) Standard Deviation:
d) IQR:
e) Range:

3) Construct a histogram of your width data:

LABEL GRAPH A

4) Construct a horizontal modified boxplot of your width data, make sure you show all of your work:

LABEL GRAPH B

5) Does your data appear to be symmetric, skewed to the left or skewed to the right?

LENGTH DATA ONLY

6) Using Rweb, sort your length data from least to greatest then list your width data below:

7) Calculate the following for your length data:
a) Mean:
b) Median:
c) Standard Deviation:
d) IQR:
e) Range:

8) Construct a histogram of your length data below:

LABEL GRAPH C

9) Construct a stem-and-leaf plot of your length data (only need a main title):

LABEL GRAPH D

10) Does your data appear to be symmetric, skewed to the left or skewed to the right?

11) Construct a scatterplot of your two datasets. Put length on the x-axis and width on the y-axis. Make sure to label x and y axis and give scatterplot a main title.

LABEL GRAPH E

12) Using Rweb, calculate correlation.

13) Using Rweb, find the equation for the least squares regression line.

14) Using Rweb, create a scatterplot and fit your least squares regression line onto the scatterplot. Once again, properly label.

LABEL GRAPH F

15) What is the slope of the least squares regression line?

16) What does the slope represent? In, other words, what does it tell us about the relationship between leaf length and leaf width?

17) Using your equation from question 13, predict the width of a tree leaf given that the length of the tree leaf was 3.1 inches.

18) List your residuals below:

19) Your 1st residual is _____. What does this number represent? In other words, what does it mean?

20) Using Rweb, construct a residual plot (with a horizontal line at Residuals=0). Does it appear to be a good residual plot?

LABEL GRAPH G

* Once you are done, order, then staple all your Rweb graphs to the back of this handout.