

Probability and Statistics

Using the class data we collected in our table, we are going to perform calculations and analyze the results using various techniques.

Let’s start by comparing the number of letters in each student’s name (on the left) to the length of their signature in centimeters (on the right). Complete the following back to back stem and leaf plot with our data. **Be sure to title the graph and label the units properly.**

	0	
	0	
	1	
	1	
	2	
	2	
	3	
	3	
	4	
	4	

List any similarities and differences you see in the two data sets.

Looking at the table, does it seem like people with more letters in their names had longer signatures? What could account for this?

Calculate the mean, median, mode, range, and midrange of each data set and write the results below.

Number of letters in name

Length of signature

Mean= median= mode=

mean= median= mode=

Range = midrange=

range= midrange=

What differences do you see in these values from one data set to another?

Using these values and the stem and leaf plots, decide whether the data sets are symmetric, skewed right, or skewed left.

Number of letters in name

Length of signature

Next, we will be comparing foot length with height. Let's create a histogram for each using the graphing calculators and use our SOCS to describe the data sets.

To graph a histogram on the calculator you must first enter the data into lists. **Put the foot lengths in L1 and the heights in L2.** The next step is to press **2nd – y= – enter**. Highlight the **on** and press **enter** to turn the stat plot on for your data. Next you use the **arrows** to highlight the **picture of a histogram** and press **enter**. Finally, you tell it what list to pull the data from and set the frequency as 1.

To set the table up press **2nd ---window** for **tblstart** put in **10** and **Δtable** as **5**. To graph the histogram press **graph---zoom---9**.

Sketch a graph of the histogram you see on the screen in the box below. If you are not sure of the numbers just press **trace** and use the arrow buttons to see the height of each bar. **Be sure to title the sketch and label the axes.**



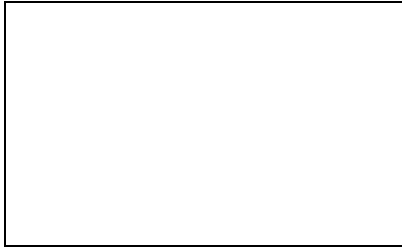
Describe the foot length histogram using your SOCS. Find the actual mean, median, and mode, using the calculator, for describing the center.

Next we will graph our data for height.

Press **2nd y= enter**. Change the list to L2 and set the frequency as 1.

To set the table up press **2nd ---window** for **tblstart** put in **120** and **Δtable** as **5**. To graph the histogram press **graph---zoom---9**.

Sketch a graph of the histogram you see on the screen in the box below. If you are not sure of the numbers just press **trace** and use the arrow buttons to see the height of each bar. **Be sure to title the sketch and label the axes.**



Describe the height histogram using your SOCS. Find the actual mean, median, and mode, using the calculator, for describing the center.

Now compare the graphs. Does it seem like taller people have bigger feet?

Look at the table, are there any exceptions to this?