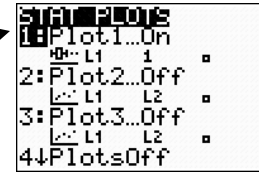


**How to Construct a Boxplot on the Calculator:**

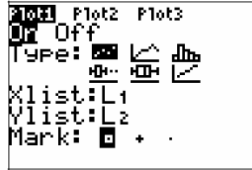
1) Enter the data into a list: {6.5, 9.9, 12.0, 13.0, 13.3, 13.9, 14.3, 14.4, 14.4, 14.5}

2) Press [ $2^{nd}$ ], then press [Y=]. This will select [STAT PLOT].

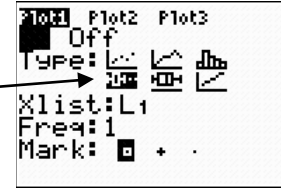


2) Select the plot you would like, for instance, [Plot 1]. Press [ENTER].

3) Select [On].



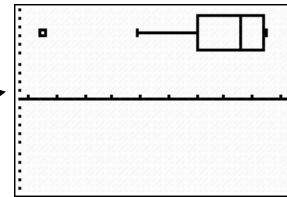
4) For [Type], select a boxplot that show outliers, this is first choice in the second row.



5) Indicate where your data is stored for [Xlist:]. (If you stored it in L1 then make sure it says L1)

6) Press [Graph]

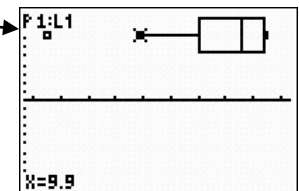
7) Press [ZOOM] and then select [9:ZoomStat]



8) Press [TRACE] and notice that a blinking cursor appears on the boxplot. The value of the variable that it is on is shown at the bottom. We can use this to find the five-number summary.

Min =            Q<sub>1</sub> =            Med =            Q<sub>3</sub> =            Max =

Outliers =



What is the shape of the distribution?

**Problems:**

1) Students in Introductory Statistics were presented with a page containing 30 colored rectangles and asked to name the colors as quickly as possible. The data for the times of the women in the class are shown in the table on the right.

14	17	18	19	20	21	29
15	17	18	19	20	21	
16	17	18	19	20	23	
16	17	18	20	20	24	
17	18	18	20	21	24	

a. Use your calculator to construct a boxplot from the given data.

b. Determine the five-number summary.

Min =            Q<sub>1</sub> =            Med =            Q<sub>3</sub> =            Max =

c. What is the interquartile range?

d. Are there any outliers? If so, what are they?

e. Reconstruct the boxplot below.



2) The ages of actresses at the time they first won their Oscar award are shown in the table on the right.

50	44	35	80	26	28	41
21	61	38	49	33	74	30
33	41	31	35	41	42	37
26	34	34	35	26	61	60
34	24	30	37	31	27	39
34	26	25	33			

a. Use your calculator to construct a boxplot from the given data.

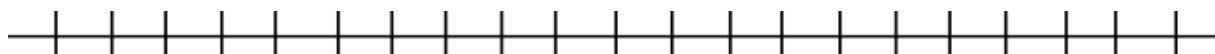
b. Determine the five-number summary.

Min =            Q<sub>1</sub> =            Med =            Q<sub>3</sub> =            Max =

c. What is the interquartile range?

d. Are there any outliers? If so, what are they?

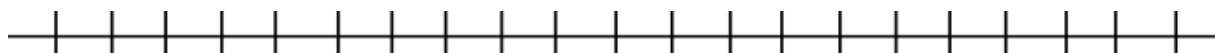
e. Reconstruct the boxplot below.



3) The table below contains the five-number summary of the response measures of three comparative medical treatments A, B, and C for fifteen different patients.

	Smallest Observation	First Quartile	Median	Third Quartile	Highest Observation
Treatment A	12.0	14.5	16.0	17.0	20.0
Treatment B	5.0	13.0	14.0	16.0	20.0
Treatment C	14.0	16.5	18.0	19.0	30.0

a. Construct a boxplot for each treatment type. Stack the boxplots using the same number line below.



b. Describe the shape of the distribution for each treatment type. Determine which treatment would have a mean that is approximately equal to the median.

Treatment A: \_\_\_\_\_

Treatment B: \_\_\_\_\_

Treatment C: \_\_\_\_\_

- c. Which treatment is more disperse (spread out)? Give a numerical value that indicates how you know which one is more disperse.

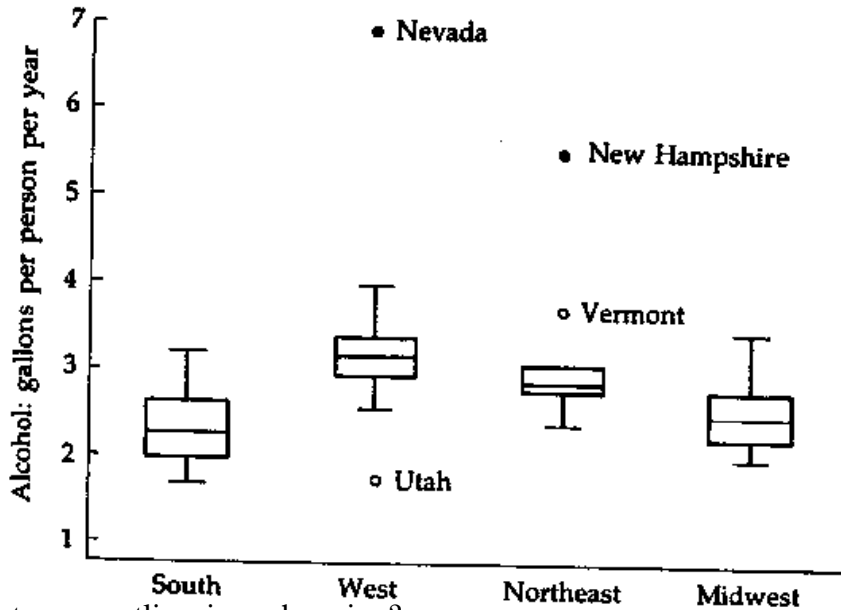
4) The following data is on the number of jumps made by student in Mr. H's class.

~~1577811620223553043889005~~

- a. Determine if there are any outliers in this data set.

- b. What percentage of the data lies between 11 and 62?

5) The following boxplots are distributions of the gallons of alcohol sold per-person per year for the four regions of the United States.



- a. What states are outliers in each region?

South: \_\_\_\_\_ West: \_\_\_\_\_

Northeast: \_\_\_\_\_ Midwest: \_\_\_\_\_

- b. Which state has a more disperse distribution for gallons of alcohol per person per year? Why?

- c. Approximate the medians for gallons of alcohol per person per year in each region?

South: \_\_\_\_\_ West: \_\_\_\_\_

Northeast: \_\_\_\_\_ Midwest: \_\_\_\_\_