

Instructions: This lab is due on Wednesday, 1/30 during the first half of class. You should hand it in when you turn in your homework. Please show work in a neat and organized manner.

The following are a simple random sample of number of minutes (on average during a week) that students exercised in minutes, as reported by students at Foothill college. The sample is derived from data collected by Professor Butterworth.

60	120	120	120	120	120	0	180	120	180	180	180
240	120	120	60	180	360	240	420	420	420	300	240
300	180	0	150	300	0	180	300				

1. Use your TI-83/84 to sort the data. Create a stem-and-leaf diagram with a stem unit of “x100” and a leaf unit of “x10” .

2. What do you notice about the shape of the data based upon the stem & leaf? (Write a complete sentence using words like symmetric, left or right skewed.)

3. a) What is the minimum? _____ b) What is the maximum? _____

c) What is the range of the data? (show work) _____

4. Find the class width if there are to be 5 classes. Show the work for computing it here. Round up to the next whole number no matter what!

5. Find **all** the lower class limits for a frequency distribution/table with 5 classes. Give the 6th lower class limit too. Show the work here.

11. Use the exact variance to find the standard deviation. Show your work. Notate correctly. Round correctly.

12. Why is the standard deviation easier for us to use than the variance?

13. Why can't we use the reported standard deviation to find the variance, even though in theory the variance is the square of the standard deviation?

14. What is the indicator function for the first quartile, Q_1 ? Show your work here.

15. Give the five number summary. Do not use your calculator's values to find quartiles. Use the indicator functions.

16. Draw a box-plot for the data. Make sure that it is a **scaled** drawing. Make the scale separately!

17. Give the IQR of the data. Show your work here.

18. Using the IQR “fences” to gauge, are there any outliers in this data? Show your work. a)
a) Give the “fences”.
b) Name the outliers if there are any.

19. Which is a better way to judge the percentage of data that lies within 2 standard deviations of the mean for this data set:

Empirical Rule or Chebyshev’s Theorem

20. Use the **mean, median and mode** to comment on the shape that you described in question #2. Is your original determination upheld or refuted?

EC1: Find the z-score of 180 minutes.

EC2: Find the percentile of 150 inches.