

Analyzing Data Activity #2

Names _____

Key

Set 1	77	78	79	80	80	81	82	83
Set 2	20	60	70	80	80	90	100	140
Set 3	50	60	70	80	80	90	100	110
Set 4	20	30	40	80	80	120	130	140

Using the sets of data above find the following:

- Find the mean, median, and mode of each set of data.

	Mean	Median	Mode
Set 1	80	80	80
Set 2	80	80	80
Set 3	80	80	80
Set 4	80	80	80

- Are the sets' average the same? Explain.

The mean, median, and mode for all 4 sets of data are 80. The measures of center are the same, but the data in each set are different.

- Find the range of each set. What do these differences tell you about each set of data?

Set 1 = 6 Set 2 = 120 Set 3 = 60 Set 4 = 120

Set 1 has the smallest spread from the highest to lowest values in the data. Sets 2 and 4 both have the largest range. The differences only tell you how far apart the minimum and maximum values are.

4. Find the 1st and 3rd quartiles of each set of data and the interquartile range for each set of data.

	1 st Quartile	3 rd Quartile	Interquartile Range
Set 1	78.5	81.5	3
Set 2	65	95	30
Set 3	65	95	30
Set 4	35	125	90

5. Which two sets of data have the same range, but are spread out differently.

Sets 2 and 4.

6. Which two sets of data have the same interquartile range, but are spread out differently.

Sets 2 and 3.

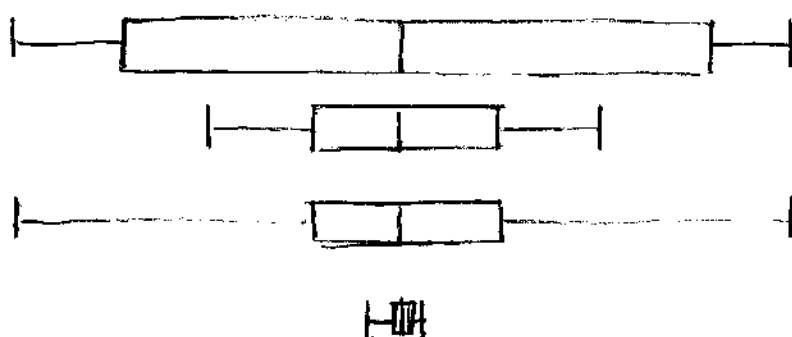
7. Which is the most spread out set? The least?

Set 4 is the most spread out because the range and IQR are the largest. Set 1 is the least spread out because the range and IQR are the smallest.

8. Are there any outliers in the sets of data? If so, list them.

There are no outliers; however, sets 2 and 3 have values on the boundary for the outliers.

9. Use the graphing calculator to make box-and-whiskers plots of the four sets of data on one graph. Sketch it on your paper and use an appropriate scale.

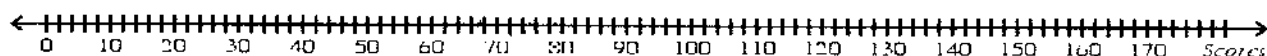


Set 4

Set 3

Set 2

Set 1



10. Find the standard deviations for sets 1, 2, 3, and 4 using the calculator.

	Set 1	Set 2	Set 3	Set 4
Standard deviation	1.9	32.0	18.7	43.9

11. Find the z-scores for 82 in set 1

z-score = 1.1

12. Find the z-scores for 75 in set 2

z-score = -.2

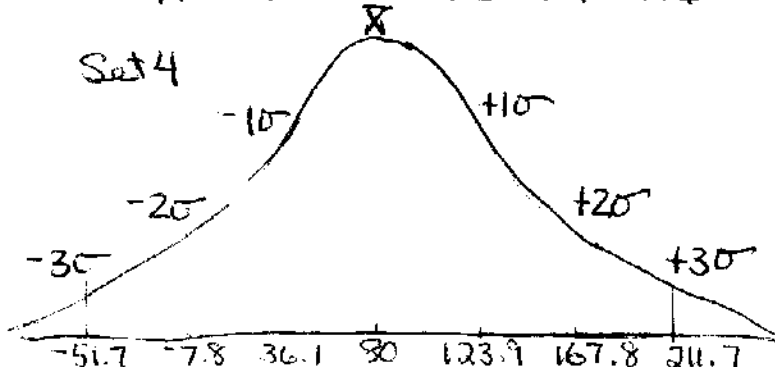
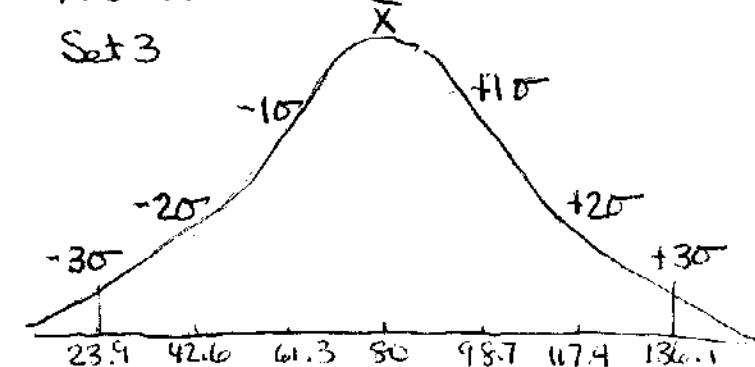
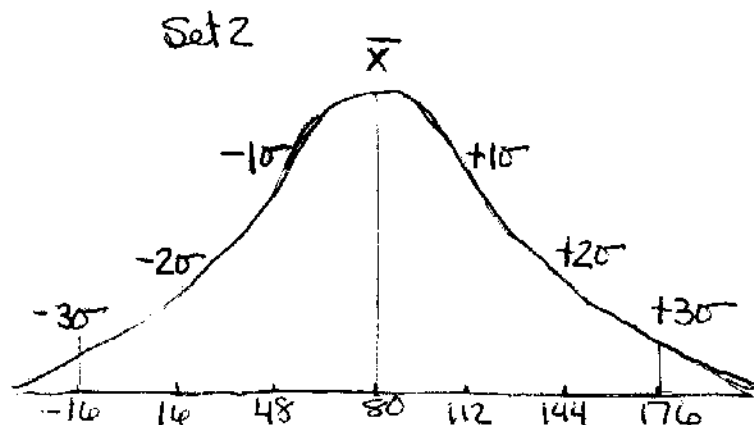
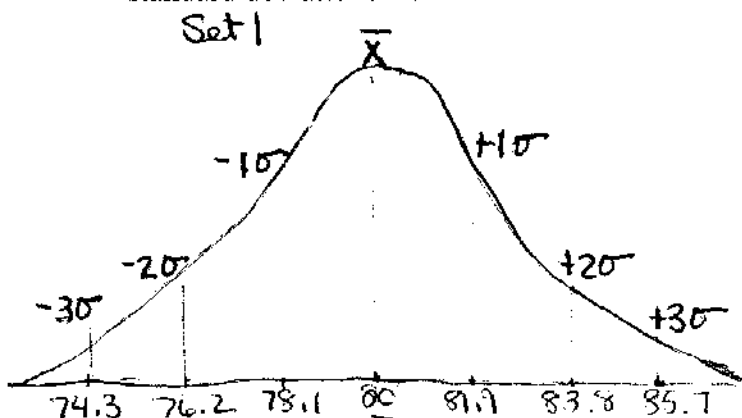
13. Find the z-scores for 90 in set 3

z-score = .5

14. Find the z-scores for 50 in set 4

z-score = -.7

15. Sketch a normal distribution for each set of data. Include the mean and values at one, two, and three standard deviations from the mean.



16. Describe the shapes of the graphs for each set of data. Are they skewed or symmetric?

Since the mean and the median are the same for all four sets, the graphs are all symmetric.