

Name:

Kelly

Date:

Hour:

Algebra 1

WS PC #1 Unit 5 Review

Find the mean, median, and mode of each data set. Which measure of center best represents the data?

1. Mean: 3

Median: 3.25

Mode: 3.5

Median

Hours Spent on Project		
3.5	5	2.5
3	3.5	0.5

2. Mean: 1314.89

Median: 1191

Mode: 1000

Median

Waterfall Height (ft.)		
1000	1267	1328
1200	1180	1000
2568	1191	1100

Find the range and standard deviation of each data set. Then compare your results.

3. Absent students during a week of school

Female: 6, 2, 4, 3, 4

Male: 5, 3, 6, 6, 9

F: range = 4
 $\sigma x = 1.33$

M: range = 6
 $\sigma x = 1.94$

male are more spread out

4. Number of points scored

Juniors: 19, 15, 20, 10, 14, 21, 18, 15

Seniors: 22, 19, 29, 32, 15, 26, 30, 19

J: range = 11
 $\sigma x = 3.43$

S: range = 17
 $\sigma x = 5.74$

Seniors are more spread out

5. A student scores 74, 68, 83, 85, 77 on their first 5 tests of the semester. What does the student have to score on the 6th test to have an average of an 80%?

$$\frac{74 + 68 + 83 + 85 + 77 + x}{6} = 80$$

6

$$387 + x = 80 \cdot 6$$

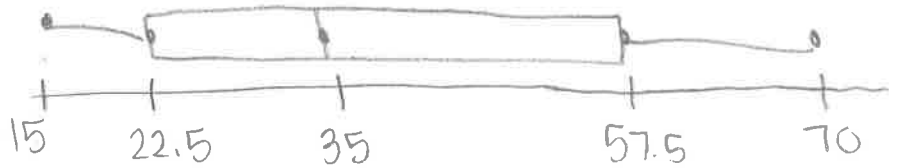
$$387 + x = 480$$

$$x = 93$$

Find the 5-number summary of each data set. Make a box-n-whisker plot that represents the data.

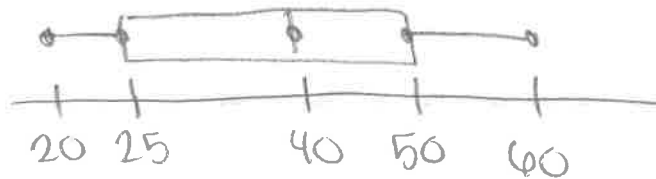
6. Ages of family members: 60, 15, 25, 20, 55, 70, 40, 30

min = 15
 Q1 = 22.5
 med = 35
 Q3 = 57.5
 max = 70



7. Minutes of violin practice: 20, 50, 60, 40, 40, 30, 60, 40, 50, 20, 20, 35

min = 20
 Q1 = 25
 med = 40
 Q3 = 50
 max = 60



8. Using your box-n-whisker plot from #6 answer the following questions.
 a. Find and interpret the range of the data.

$$70 - 15 = \boxed{55}$$

- b. Describe the distribution of the data.

skew right

- c. Find and interpret the interquartile range of the data.

$$57.5 - 22.5 = \boxed{35}$$

- d. Are the data more spread out below Q1 or above Q3? Explain.

above Q3

- e. Find the values of the measures when each data set is increased by 7.

original mean = 39.38
 median = 35
 mode = none

range = 55
 st. dev = 18.95

new mean = 46.38
 median = 42
 mode = none

range = 62
 $\sigma_x = 25.95$

- f. Find the values of the measures when each data set is decreased by 10%.

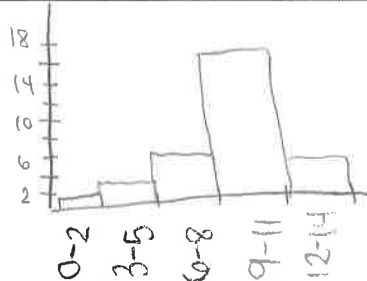
$$1 - 0.1 = 0.9$$

mean = 35.44
 median = 31.5
 mode = none

range = 49.5
 $\sigma_x = 17.06$

9. Display the data in a histogram. Describe the shape of the data.

Quiz Score	0-2	3-5	6-8	9-11	12-14
Frequency	1	3	6	16	4



Skew left

10. The table shows the prices of 8 mountain bikes in a sporting good store.

Price (\$)	98	119	211	130	98	100	95	125
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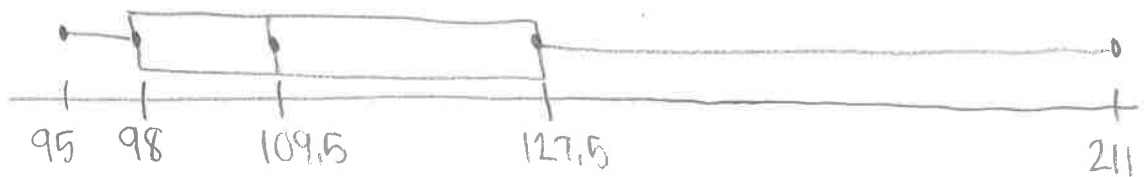
a. Find the mean, median, mode, range, and standard deviation of the prices.

$$\begin{aligned} \bar{x} &= 122 & \text{range} &= 116 \\ \text{med} &= 109.5 & \sigma_x &= 36 \\ \text{mode} &= 98 \end{aligned}$$

b. Identify the outlier. How does the outlier affect the mean, median, and mode?

$$\begin{aligned} 1.5 IQR \quad Q1 &= 98 \quad Q3 = 127.5 & Q1 - 44.5 & \quad Q3 + 44.5 \\ IQR &= 127.5 - 98 = 29.5 & & \quad 53.5 \quad \quad 172 \\ 1.5(29.5) &= 44.25 & \text{Outlier} &= 211 \quad \text{It skews the data} \end{aligned}$$

c. Make a box-n-whisker plot that represents the data. Find and interpret the interquartile range of the data.



$$IQR = 29.5$$

d. Identify the shape of the data.

Skew right

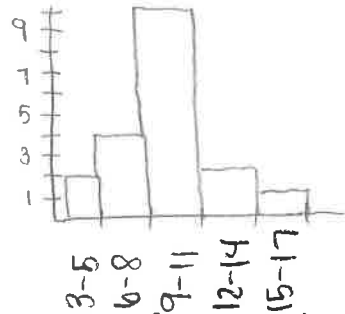
e. Find the mean, median, mode, range, and standard deviation of the prices when the store offers a 5% discount on all mountain bikes.

$$\begin{aligned} 1 - 0.05 &= 0.95 & \bar{x} &= 115.9 & \text{range} &= 110.2 \\ \text{mult. all} & & \text{med} &= 104.025 & \sigma_x &= 34.2 \\ \text{values in} & & \text{mode} &= 93.1 & & \\ \text{part 'a' by} & & & & & \\ 0.95 & & & & & \end{aligned}$$

11. The table shows the times of 20 presentations.

Time (minutes)			
9	7	10	12
10	11	8	10
10	17	11	5
9	10	4	12
6	14	8	10

a. Display the data in a histogram using 5 intervals beginning with 3-5.



time	freq
3-5	2
6-8	4
9-11	10
12-14	2
15-17	1

b. Which measures of center and variation best represent the data? Explain.

Skew right so median and 5 number summary

c. The presentations are supposed to be 10 minutes long. How would you interpret the results?

Most were within 10 mins. but not many exactly 10 mins.

12. The ages of male and female volunteers at a hospital are listed below.

Male: 14, 17, 20, 16, 17, 14, 21, 18, 22

Female: 13, 22, 17, 30, 25, 14, 14, 18, 19, 29

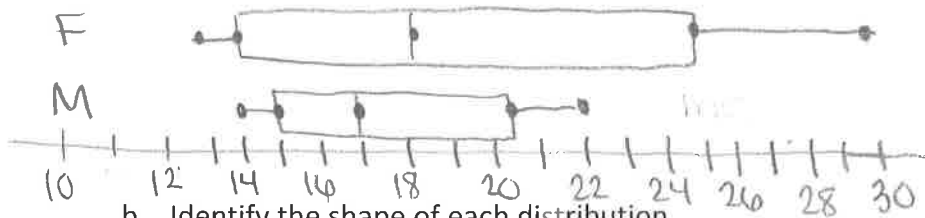
male

female

min = 14
 Q1 = 15
 med = 17
 Q3 = 20.5
 max = 22

13
 14
 18.5
 25
 30

a. Make a parallel box-n-whisker plot to represent the data.



b. Identify the shape of each distribution.

F: Skew right

M: Skew right

c. Which age is more spread out? Explain.

Female - range is more than male