

4/25/17 CCM6

Review for QUIZ tomorrow. Describe shape of data. How are measures affected by outliers?

1. HW is pages 16-18
2. No warm-up today.

HW

PRACTICE

1.

| | | | | | | |
|-------------------------------|----|----|----|----|----|----|
| Jessica's History Test Scores | 81 | 97 | 99 | 89 | 91 | 50 |
|-------------------------------|----|----|----|----|----|----|

50, 81, 89, 91, 97, 99
90

Range: 49

Mean: $\frac{907}{4} = 84.5$

Median: 90

Mode: none

Which measure of center is best for Jessica—mean or median? Explain.

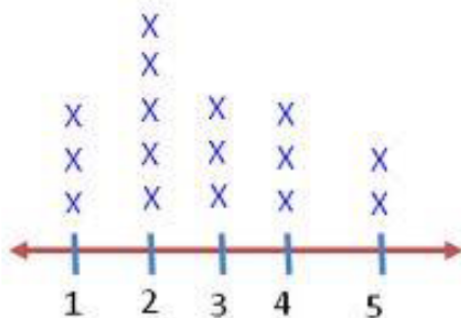
med - outlier of 50

2. On an exam, three students scored 75, four students scored 82, three students scored 88, four students scored 93, and one student scored 99. If the answer is 88, what is the question? *Hint: Write the scores out!*

75, 75, 75, 82, 82, 82, 82, 88, 88, 88, 93, 93, 93, 93, 99

What is the median?

3. Find the mean, median, mode, and range of the dot plot.



Mean: $\frac{44}{16} = 2.75$

Median: 2.5

Mode: 2

Range: 4

For the line plot, is mean or median a better measure of center? Explain.

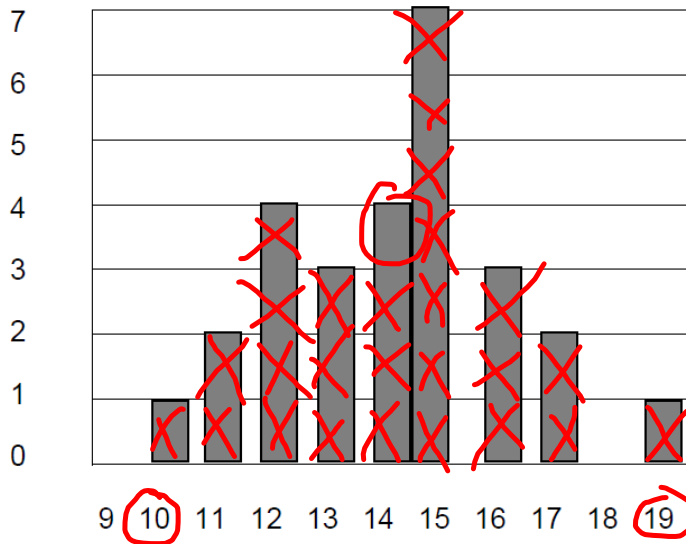
either - no outlier

Describe the shape of the data...gap? cluster?

peak? skewed or symmetrical?

The two graphs below show students' name lengths in two classes.

Ms. Campo's class:



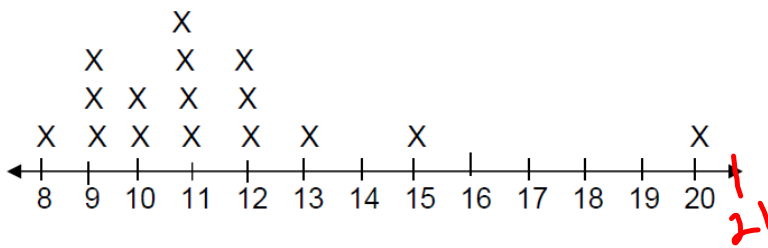
Mean = 14.1 $\frac{381}{27}$

Median = 14

Mode = 15

Range = 19 - 10 = 9

Mr. Young's class:



Mean = _____

Median = _____

Mode = _____

Range = _____

- What is the typical name length for:
 - Ms. Campo's class.
 - Mr. Young's class.
- Find the mean, median, mode, and range for both classes in the boxes above.
- How does the data distribution (SHAPE) compare between these two classes?
- Since Mr. Young's class data has an outlier, which measure best represents his data?

Why is median better with an outlier?

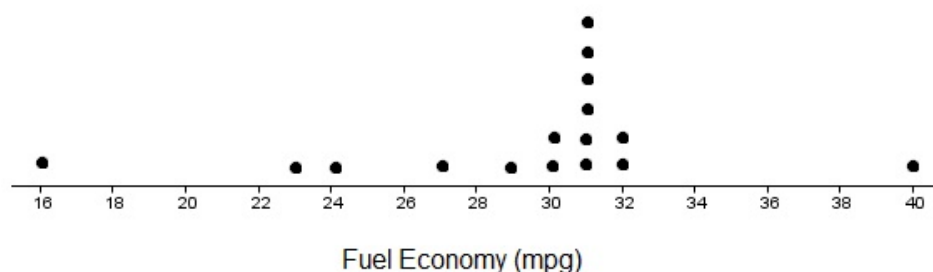
99, 100, 89, 86, 40

~~40, 86, 89~~ | 99, 100

| | with 40 | w/o 40 |
|--------|------------------------|------------------------|
| Median | 89 | 94 |
| mean | $\frac{414}{5} = 82.8$ | $\frac{374}{4} = 93.5$ |

REVIEW FOR QUIZ TOMORROW

Fuel Economy for a Random Sample of 2015 Model Year Vehicles



Find mean, median, mode and range.

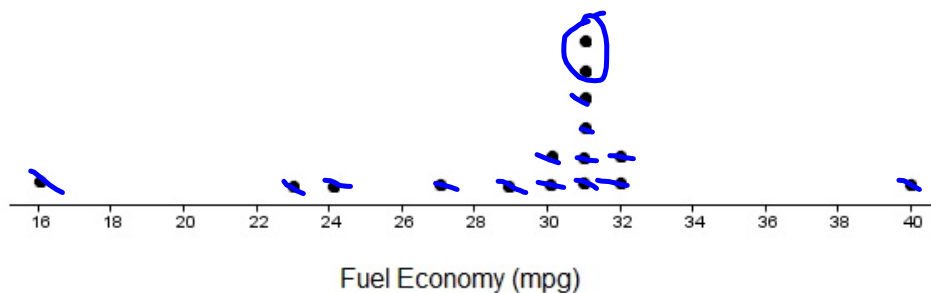
Describe the shape of the data 2 ways.

Is there an outlier? What?

Would mean or median be better?

REVIEW FOR QUIZ TOMORROW

Fuel Economy for a Random Sample of 2015 Model Year Vehicles



Find mean, median, mode and range.

$$\frac{469}{16} = 29.3$$

31 31

$$40 - 16 = 24$$

Describe the shape of the data 2 ways.

peak at 31

gaps 17-22 + 33-39

skewed right

cluster 29-32

Is there an outlier? What?

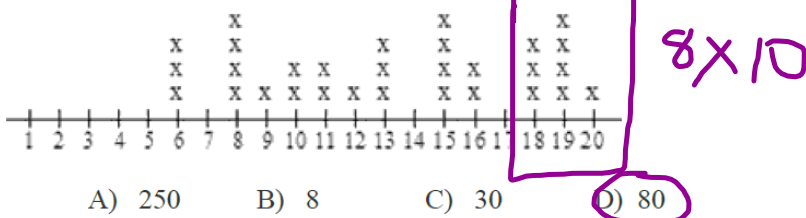
maybe 16 + 40

Would mean or median be better?

median if outliers

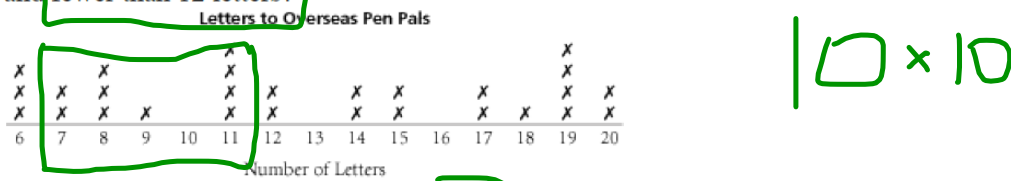
HW

1. The line plot below represents the number of letters written to overseas pen pals by the students at Waverly Middle School. Each "x" represents 10 students. How many students wrote 18 or more letters?



- A) 250 B) 8 C) 30 D) 80

2. The line plot below represents the number of letters written to overseas pen pals by the students at Waverly Middle School. Each "x" represents 10 students. How many students wrote more than 6 and fewer than 12 letters?



- A) 110 B) 120 C) 100 D) 90

3. Thirteen bowlers were asked what their score was on their last game. The scores are shown below.

183, 152, 155, 181, 176, 193, 171, 170, 186, 170, 187, 159, 183

Find the range of the bowlers' scores.

- A) 20 B) 41 C) 53 D) 31

4. A group of friends tested themselves to see how many times each person could hit a tennis ball against the wall without missing. The results are below:

7 15 28 8 21 30 30 10
22 4 17 7 17 22 10 8

Find the range of the data set.

- A) 26 B) 16 C) 36 D) 23

5. Thirteen bowlers were asked what their score was on their last game. The scores are shown below.

190, 150, 154, 194, 182, 190, 170, 151, 190, 170, 178, 161, 180

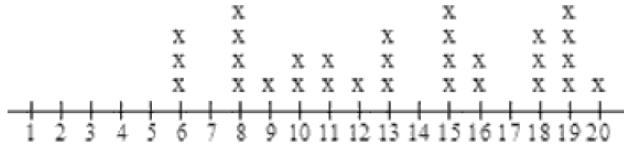
Find the range of the bowlers' scores.

- A) 56 B) 44 C) 34 D) 23

HW

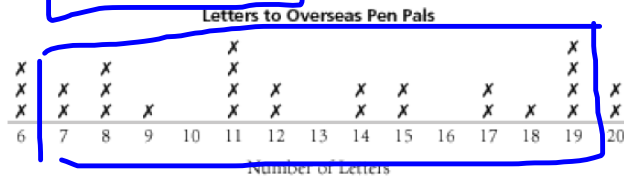
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6. The line plot below represents the number of letters written to overseas pen pals by the students at Waverly Middle School. Each "x" represents 10 students. How many students wrote 14 or more letters?



- A) 140 B) 160 C) 0 D) 14

7. The line plot below represents the number of letters written to overseas pen pals by the students at Waverly Middle School. Each "x" represents 10 students. How many students wrote more than 6 and fewer than 20 letters?



23 x 10

- A) 250 B) 240 C) 230 D) 220

8. A group of friends tested themselves to see how many times each person could hit a tennis ball against the wall without missing. The results are below:

| | | | | | | | |
|----|----|----|---|----|----|----|----|
| 8 | 13 | 22 | 8 | 18 | 28 | 28 | 12 |
| 25 | 6 | 15 | 8 | 15 | 25 | 12 | 8 |

Find the range of the data set.

- A) 19 B) 22 C) 32 D) 12

9. A group of friends tested themselves to see how many times each person could hit a tennis ball against the wall without missing. The results are below:

| | | | | | | | |
|----|----|----|---|----|----|----|----|
| 7 | 11 | 25 | 7 | 25 | 23 | 23 | 15 |
| 21 | 7 | 12 | 7 | 12 | 21 | 15 | 7 |

Find the range of the data set.

- A) 28 B) 8 C) 18 D) 15

HW

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10. Thirteen bowlers were asked what their score was on their last game. The scores are shown below.

192, 158, 154, 195, 180, 183, 188, 151, 180, 185, 184, 166, 184

Find the range of the bowlers' scores.

- A) 56 B) 34 C) 23 D) 44

✓ 11. Which measure is affected **MOST** by an outlier?

- A) mean B) median C) mode

Why? middle is unaffected

✓ 12. Which measure is affected **LEAST** by an outlier?

- A) mean B) median C) mode

Why? peak unaffected

13. How is a bar graph like a line plot (dot plot)?

14. What kind of data is best for the mode? the median? the mean?

favorite →
no outlier →
if there's an outlier