Center of Attention

Compare the mean and median of seven-dot plots.

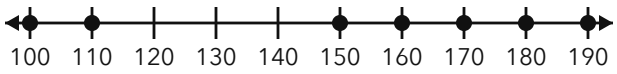
S-ID.1 "Represent and analyze data with plots on the real number line (dot plots, histograms, and box plots).*"

NAME _____ DATE _____

MEDIAN IS LARGER

With seven dots, the median is the fourth value from the left. The mean is the sum of the seven values divided by 7. Choose this category when the median is larger.

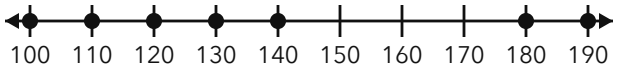
The median is 160. The mean is 1060 ÷ 7, or about 151.43.



MEAN IS LARGER

Choose this category when the sum of the seven values divided by 7 is larger than the fourth value from the left.

The median is 130. The mean is 970 ÷ 7, or about 138.57.



1 SORT

8 items

In Part 1, circle the tag for the larger center in each figure; in Part 2, pick two figures and explain your choices using their medians and means.

1.

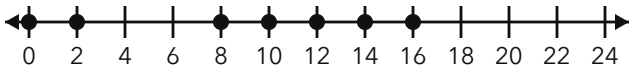


Figure 1

MEDIAN MEAN

2.

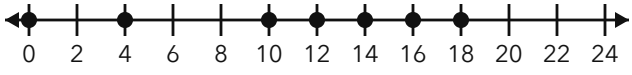


Figure 2

MEDIAN MEAN

3.

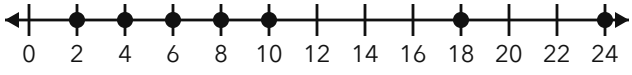


Figure 3

MEDIAN MEAN

4.

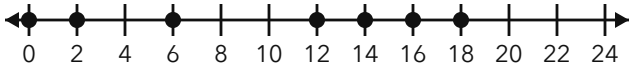


Figure 4

MEDIAN MEAN

5.

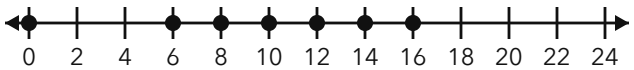


Figure 5

MEDIAN **MEAN**

6.

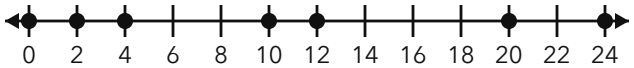


Figure 6

MEDIAN **MEAN**

7.

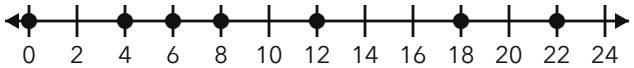


Figure 7

MEDIAN **MEAN**

8.

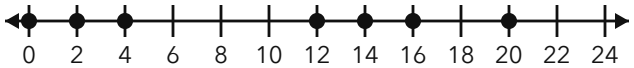


Figure 8

MEDIAN **MEAN**

2 PROVE IT

Explain your thinking

Pick two items from Part 1. For each one, tell how you knew where it belonged.

ITEM # _____ **HOW I KNEW** _____

ITEM # _____ **HOW I KNEW** _____

3 MAKE YOUR OWN

One of each

Write two new seven-value data sets that could be shown as dot plots, one for MEDIAN and one for MEAN. Give the median and mean of each set.

MEDIAN _____

MEAN _____

CHALLENGE

In Figure 1, change only the largest value so the mean becomes greater than the median. List the new values and find both centers.

ANSWER KEY # Center of Attention

PART 1 · SORT

#	ITEM	CATEGORY	WHY
1	Figure 1 (numberline)	**MEDIAN**	Median 10; mean 62 ÷ 7 ≈ 8.86.
2	Figure 2 (numberline)	**MEDIAN**	Median 12; mean 74 ÷ 7 ≈ 10.57.
3	Figure 3 (numberline)	**MEAN**	Median 8; mean 72 ÷ 7 ≈ 10.29.
4	Figure 4 (numberline)	**MEDIAN**	Median 12; mean 68 ÷ 7 ≈ 9.71.
5	Figure 5 (numberline)	**MEDIAN**	Median 10; mean 66 ÷ 7 ≈ 9.43.
6	Figure 6 (numberline)	**MEAN**	Median 10; mean 72 ÷ 7 ≈ 10.29.
7	Figure 7 (numberline)	**MEAN**	Median 8; mean 70 ÷ 7 = 10.
8	Figure 8 (numberline)	**MEDIAN**	Median 12; mean 68 ÷ 7 ≈ 9.71.

PART 2 · PROVE IT

Accept any explanation that names the deciding feature from the rule box for the chosen item.

PART 3 · MAKE YOUR OWN (SAMPLE ANSWERS)

- **MEDIAN**: 1, 3, 7, 9, 11, 13, 15. Median 9; mean 59 ÷ 7 ≈ 8.43.
- **MEAN**: 1, 3, 5, 7, 9, 15, 17. Median 7; mean 57 ÷ 7 ≈ 8.14.

Challenge: Replace 16 with 30: 0, 2, 8, 10, 12, 14, 30. The median stays 10, and the mean becomes 76 ÷ 7 ≈ 10.86.

Each dot represents one value, so the fourth dot gives the median. For Part 2, accept any two explanations that correctly compare each figure's mean and median.