LESSON MAKER PRO

Data Detective

Find the center and spread of one-variable data.

HIGH SCHOOL · HSS-ID.A

CCSS.Math.Content.HSS-ID.A "Summarize, represent, and interpret data on a single count or measurement variable"

NAME _____ DATE _____

CENTER AND SPREAD

The mean is the total of all values divided by the number of values. Order the data before finding the median, then subtract the smallest value from the largest value to find the range. When one value is much higher or lower than the others, the median may describe a typical value better than the mean.

WORKED EXAMPLE

Find the mean, median, and range of 13, 17, 18, 22, 25.

1. 13 + 17 + 18 + 22 + 25 = 95.
2. 95 / 5 = 19, so the mean is 19.
3. The middle value is 18, so the median is 18.
4. 25 - 13 = 12, so the range is 12.

Answer: Mean: 19; median: 18; range: 12

PRACTICE 6 problems

1 Find the mean of 4, 6, 8, 10.

ANSWER _____

2 Find the median of 3, 7, 9, 11, 15, 21.

ANSWER _____

3 Find the range of 2, 4, 4, 6, 9.

ANSWER _____

4 The data are 1, 2, 2, 3, 30. Which measure, mean or median, better describes a typical value? State the measure and its value.

ANSWER _____

5 Set A: 4, 6, 8, 10. Set B: 0, 6, 8, 14. Do the sets have the same mean? Which set has less variability? Use ranges to support your answer.

ANSWER _____

6 The mean of 6, 8, 9, 11, x is 10. Find x.

ANSWER _____

APPLY IT Show your work

1 A student records minutes spent editing a video on four normal days: 8, 10, 11, 15. Find the mean, median, and range. On another day, an interruption makes the editing time 40 minutes. For the full data set, which measure of center best describes a usual editing time?

WORK SPACE

ANSWER _____

2 Two esports teams record their points in four ranked matches. Team Nova scores 6, 8, 10, 14. Team Pulse scores 8, 9, 10, 11. Which team has more consistent scores? Compare both the mean and the range.

WORK SPACE

ANSWER _____

CHALLENGE One step up

A music creator tracks daily downloads for five days: 2, 6, 10, 14, x. The mean is 14. Another creator's five-day downloads are 9, 11, 14, 16, 20. Find x, then explain which creator has more consistent download totals using ranges.

WORK SPACE AND ANSWER

ANSWER KEY # Data Detective

PART 1 · PRACTICE

#	PROBLEM	ANSWER
1	Find the mean of 4, 6, 8, 10.	**7**
2	Find the median of 3, 7, 9, 11, 15, 21.	**10**
3	Find the range of 2, 4, 4, 6, 9.	**7**
4	The data are 1, 2, 2, 3, 30. Which measure, mean or median, better describes a typical value? State the measure and its value.	**Median, 2. The value 30 is an outlier.**
5	Set A: 4, 6, 8, 10. Set B: 0, 6, 8, 14. Do the sets have the same mean? Which set has less variability? Use ranges to support your answer.	**Both sets have mean 7. Set A has less variability because its range is 6, while Set B's range is 14.**
6	The mean of 6, 8, 9, 11, x is 10. Find x.	**16**

PART 2 · APPLY IT

1. **For the four normal days, mean: 11; median: 10.5; range: 7. For the full data set, the median, 11, best describes a usual editing time because 40 is an outlier.** The normal-day total is 44, so the mean is 44 / 4 = 11. With 40 included, the ordered data are 8, 10, 11, 15, 40, and the middle value is 11.
2. **Team Pulse has more consistent scores. Both teams have a mean of 9.5, but Team Pulse has range 3 and Team Nova has range 8.** Each team has a total of 38 points, so each mean is 38 / 4 = 9.5. The smaller range shows that Team Pulse's scores vary less.

CHALLENGE

x = 38. The second creator has more consistent download totals because the first creator's range is 36 and the second creator's range is 11.

Accept decimal or fractional forms for non-integer values, such as 10.5 or 21/2 and 9.5 or 19/2. For comparison items, accept equivalent reasoning that correctly identifies the smaller range as less variable.