LESSON MAKER PRO

Center and Spread

Use mean and range to describe a data set.

GRADE 6 · 6.SP.A.3

CCSS.Math.Content.6.SP.A.3 "Recognize that a measure of center for a numerical data set summarizes all of its values with a single number, while a measure of variation describes how its values vary with a single number."

NAME _____ DATE _____

ONE NUMBER, TWO JOBS

The mean is a measure of center. Add all the values and divide by the number of values. The range is a measure of variation, so subtract the lowest value from the highest value to find how spread out the data are.

WORKED EXAMPLE

Find the mean and range of 41, 45, 50, 56.

1. Add the values: 41 + 45 + 50 + 56 = 192.
2. Divide by the number of values: 192 / 4 = 48.
3. Subtract lowest from highest: 56 - 41 = 15.

Answer: Mean = 48; range = 15.

PRACTICE 6 problems

1 Find the mean and range of 2, 6, 10, 14.

ANSWER _____

2 Find the mean and range of 1, 1, 7, 7, 9.

ANSWER _____

3 Find the mean and range of 11, 13, 17, 23.

ANSWER _____

4 Set A is 2, 8, 14. Set B is 7, 8, 8, 8, 9. Which set has greater variation? Use the ranges to explain.

ANSWER _____

5 The data set is 16, 18, 18, 20, 23. Find the mean, which describes the center, and the range, which describes the variation.

ANSWER _____

6 A data set has a mean of 22 and a range of 6. State what each measure tells about the data.

ANSWER _____

APPLY IT Show your work

1 Rina tracked her reading minutes for five days: 13, 17, 19, 25, 31. Find the mean and range. What does each number tell about her reading time?

WORK SPACE

ANSWER _____

2 Two players record points in five practice rounds. Pixel's points are 6, 12, 17, 22, 28. Nova's points are 16, 16, 17, 18, 18. Find each mean and range. Which player had more consistent scores?

WORK SPACE

ANSWER _____

CHALLENGE One step up

The data set 7, 13, x, 26 has a mean of 19. Find x. Then find the range. In one sentence, explain which result is the center and which result is the variation.

WORK SPACE AND ANSWER

ANSWER KEY

Center and Spread

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PART 1 · PRACTICE

#	PROBLEM	ANSWER
1	Find the mean and range of 2, 6, 10, 14.	**Mean = 8; range = 12.**
2	Find the mean and range of 1, 1, 7, 7, 9.	**Mean = 5; range = 8.**
3	Find the mean and range of 11, 13, 17, 23.	**Mean = 16; range = 12.**
4	Set A is 2, 8, 14. Set B is 7, 8, 8, 8, 9. Which set has greater variation? Use the ranges to explain.	**Set A has greater variation because its range is 12, while Set B's range is 2.**
5	The data set is 16, 18, 18, 20, 23. Find the mean, which describes the center, and the range, which describes the variation.	**Mean = 19; range = 7.**
6	A data set has a mean of 22 and a range of 6. State what each measure tells about the data.	**The mean of 22 describes the center of the data. The range of 6 describes the variation, or spread, of the data.**

PART 2 · APPLY IT

1. **Mean = 21 minutes; range = 18 minutes. The mean shows that 21 minutes is the center of Rina's reading times, and the range shows that her times spread across 18 minutes.** Add the minutes to get 105, then divide by 5 to get a mean of 21. Subtract 13 from 31 to get a range of 18.
2. **Pixel: mean = 17, range = 22. Nova: mean = 17, range = 2. Nova had more consistent scores because Nova's range is smaller.** Both sets have a total of 85, so each mean is 17. Pixel's range is 28 - 6 = 22, and Nova's range is 18 - 16 = 2.

CHALLENGE

x = 30; range = 23. The mean of 19 is the center, and the range of 23 is the variation.

Accept answers that use spread instead of variation. For the challenge, accept a correct equation such as (7 + 13 + x + 26) / 4 = 19.