

Homework 6.3 Comparison of Data

Answer the following questions with the best answer and explanations to support, if applicable.

1. The table shows the scores from the top 10 players of our Homecoming basketball game.

Which player scored more than the upper quartile of the data?

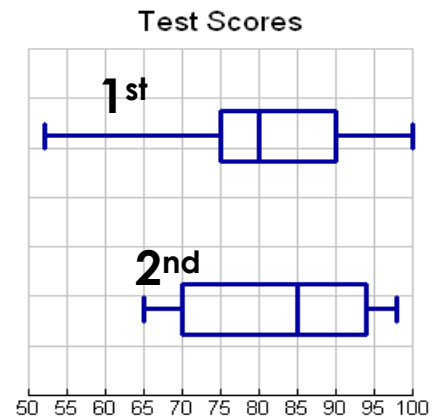
- A. Matt
- B. Michael
- C. Jim
- D. Bobby

| Player | Points | Player | Points |
|---------|--------|--------|--------|
| Michael | 12 | Dave | 9 |
| Brendan | 6 | Heath | 15 |
| Andrew | 21 | Jack | 3 |
| Jim | 14 | Bobby | 10 |
| Andre | 5 | Matt | 18 |

For #'s 2-3, use the graph to the right.

2. Fill in the blanks:

- The median for 1st period is _____
- The median for 2nd period is _____
- The lowest score for 1st period is _____
- The lower quartile for 2nd period is _____
- The spread of the middle 50% for 2nd period is _____



3. Which statement below is NOT true?

- A. 1st period had the highest score on the test
- B. The median for 1st period is 5 less than the median for 2nd
- C. The LQ for 1st period is 5 less than LQ for 2nd period
- D. The UQ for 2nd period is 94

Sample A: 2, 4, 4, 4, 8, 8, 10, 12, 12, 14 Sample B: 0, 1, 4, 7, 9, 9, 10, 12, 12, 15

4. Which statement accurately compares the two samples?

- A. The mean for Sample A is 1 greater than the mean of Sample B.
- B. The mean for Sample B is 1 greater than the mean of Sample A.
- C. The mean for Sample A is 0.1 greater than the mean of Sample B.
- D. The mean for Sample B is 0.1 greater than the mean of Sample A.
- E.

5. Your scores on the first 4 tests in Algebra were 85, 80, 90, and 93. What do you need to make on the 5th test to have a 90 average in the class?

6. Which measure of central tendency is MOST EASILY affected by outliers?

7. Forty-five people were asked about how many miles they walked in one week. The results are shown in the graph. *How does the median number of miles walked for boys compare with the median number of miles walked for girls?*



8. The table below shows the running times for science-fiction movies. Find the Mean Absolute Deviation of the data.

| Running Times for Movies (min) | | | | | |
|--------------------------------|----|----|----|-----|-----|
| 98 | 87 | 93 | 88 | 126 | 108 |

9. The summary statistics for all of the workers at a steel factory are shown. Three sample groups were taken from each of the three shifts. For which sample group is the mean deviation greater than that of the population?

Steel Factory Workers Ages

Mean Deviation: 11.23

| Shift 1 | Shift 2 | Shift 3 |
|---------|---------|---------|
| 23 | 19 | 21 |
| 19 | 22 | 23 |
| 50 | 24 | 25 |
| 49 | 40 | 40 |
| 67 | 45 | 35 |
| 34 | 29 | 19 |
| 30 | 33 | 70 |
| 59 | 29 | 40 |
| 40 | 39 | 22 |
| 33 | 59 | 23 |

10. Some people use “average” interchangeably for both mean and median. Consider this statement:

“Just think of how stupid the average person is, and then realize half of them are even stupider?” George Carlin

What type of “average” is George Carlin referring to, mean or median? Is it possible to have more than half of a population above this kind of average? Explain why.

11. What is the difference between mean and median?

12. Give an example of data when the mean and median might have the same value.

Give an example when the mean and the median do NOT have the same value.

13. Can the following statement be true? Why or why not?

“Welcome to Lake Wobegon, where all the women are strong, all the men are good-looking, and all the children are above average.” Garrison Keillor

14. Is it possible to have more than half of data values above (or below) the mean?

| | | | | | |
|---|---|---|--|---|---|
| <p>Data Set 1 9, 10, 4, 6, 7, 8, 7, 9, 5, 9, 9, 5, 8,</p> | <p>Data Set 2 8, 2, 1, 1, 3, 5, 3, 3, 1</p> | → | <p>Find the Measures of Center – Mean, Median, & Mode for both data sets.</p> <table style="width: 100%; border: none;"> <tr> <td style="width: 50%; border: none;"> <p>Data Set 1</p> <p>15. Find the Mean: _____</p> <p>16. Find the Median: _____</p> <p>17. Find the Mode: _____</p> </td> <td style="width: 50%; border: none;"> <p>Data Set 2</p> <p>18. Find the Mean: _____</p> <p>19. Find the Median: _____</p> <p>20. Find the Mode: _____</p> </td> </tr> </table> | <p>Data Set 1</p> <p>15. Find the Mean: _____</p> <p>16. Find the Median: _____</p> <p>17. Find the Mode: _____</p> | <p>Data Set 2</p> <p>18. Find the Mean: _____</p> <p>19. Find the Median: _____</p> <p>20. Find the Mode: _____</p> |
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Answer the following questions after you find the measures of center above.

21. Which data set has a higher mean?

22. Which data set has a lower median?

23. When you input “7” to data set 2, is the mean higher than the mean in data set 1?

2. Use Data Set 3 to answer questions below.

| | | | | |
|--|--|---|--|--|
| <p>Data Set 3 40, 20, 10, 5, 7, 8, 11, 21, 9, 10</p> | → | <p>Find the Measures of Spread (Variability)</p> <table style="width: 100%; border: none;"> <tr> <td style="width: 50%; border: none;"> <p>Data Set 3</p> <p>24. Find the Range: _____</p> <p>25. Find the IQR: _____</p> <p>26. Find the MAD: _____</p> </td> <td style="width: 50%; border: none;"> <p>Data Set 3 (when you input “22” into set)</p> <p>27. Find the Range: _____</p> <p>28. Find the Median: _____</p> <p>29. Find the MAD: _____</p> </td> </tr> </table> | <p>Data Set 3</p> <p>24. Find the Range: _____</p> <p>25. Find the IQR: _____</p> <p>26. Find the MAD: _____</p> | <p>Data Set 3 (when you input “22” into set)</p> <p>27. Find the Range: _____</p> <p>28. Find the Median: _____</p> <p>29. Find the MAD: _____</p> |
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30. When you input “22” to data set 3, is the range higher, lower, or the same? _____

31. When you input “22” to data set 3, does the mean skew to the right, skew to the left, or stay the same? _____

32. When you input “22” to data set 3, does the IQR increase, decrease or neither? _____

3. Below is Data from 2 different periods. Answer the questions below using the information.

| 1 st Period Test Scores | |
|------------------------------------|--------|
| Name | Scores |
| Jamiah | 30 |
| Daniel | 34 |
| Austin | 33 |
| Thaddius | 70 |
| James | 40 |
| Thomas | 36 |
| Diamond | 39 |
| Edgar | 43 |

| 2 nd Period Test Scores | |
|------------------------------------|--------|
| Name | Scores |
| Alissa | 80 |
| Keyshawn | 92 |
| Mekivah | 94 |
| Leland | 80 |
| Leslie | 85 |
| MD | 81 |
| Ernesto | 84 |
| Nathalie | 88 |



| Find the Measures of Center – Mean, Median, & Mode for both data sets. | |
|--|---------------------------------|
| 1 st Period Averages | 2 nd Period Averages |
| 33. Find the Mean: _____ | 36. Find the Mean: _____ |
| 34. Find the Median: _____ | 37. Find the Median: _____ |
| 35. Find the Mode: _____ | 38. Find the Mode: _____ |

39. Which period has a higher mean average?
40. Which period has a higher median?
41. Which class did better on their test overall. Explain why.
42. There is an outlier in 1st period averages. Who is it and what is the average? Explain you chose this as the outlier.
43. When you eliminate the outlier in 1st period averages data, which data set has a higher mean? Explain why.