

Grade 6 · Mean, Median, Range, IQR and Mean Absolute Deviation · Quiz

Common Core 6.SP.A.3, 6.SP.B.5c, 6.SP.B.5d · mathovore.fr

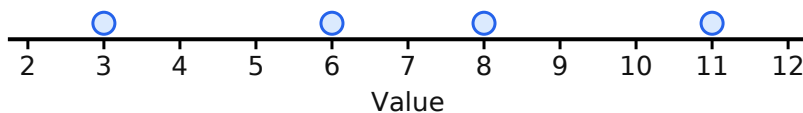
Name: _____ Date: ____/____/____ Score: _____

This quick quiz has ten multiple-choice questions on the mean, median, range, interquartile range, and mean absolute deviation. Choose one answer for each question. After you finish, read each explanation to see the common mistake behind the wrong choices.

Grade 6 Common Core: 6.SP.A.3 · 6.SP.B.5c · 6.SP.B.5d

Questions

Question 1



Dot plot for Question 1.

What is the mean of the data shown?

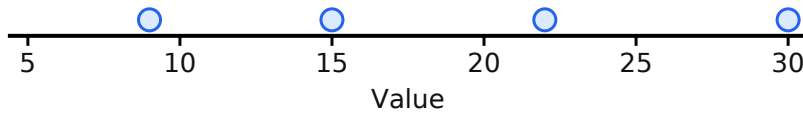
- A. 7.5
- B. 28
- C. 7
- D. 8

Question 2

What is the median of 3, 9, 2, and 12?

- A. 5.5
- B. 6
- C. 6.5
- D. 12

Question 3

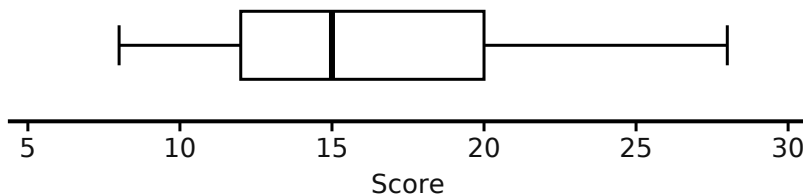


Dot plot for Question 3.

What is the range of the data shown?

- A. 30
- B. 76
- C. 15
- D. 21

Question 4



Box plot for Question 4.

What is the interquartile range?

- A. 8
- B. 32
- C. 16
- D. 4

Question 5

The distances of five values from their mean are 2, 0, 1, 3, and 4. What is the mean absolute deviation?

- A. 10
- B. 4
- C. 5
- D. 2

Question 6

Which measure of center is least affected by one extremely large value?

- A. mean
- B. range

- C. mean absolute deviation
- D. median

Question 7

Five values have a mean of 11. Four of them are 8, 12, 9, and 11. What is the fifth value?

- A. 15
- B. 11
- C. 55
- D. 14

Question 8

Team A has a MAD of 1.5 points and Team B has a MAD of 4 points. Both have the same mean. Which team is more consistent?

- A. Team B, because its MAD is larger
- B. Team A, because its MAD is larger
- C. Team A, because its MAD is smaller
- D. Team B, because its MAD is smaller

Question 9

A data set has one very large outlier. Which pair of measures should be used to describe it?

- A. mean and MAD
- B. median and IQR
- C. mean and IQR
- D. range and mean

Question 10

Sofia's mean score on 6 tests is 85. What is the total of her 6 scores?

- A. 510
- B. 91
- C. 425
- D. 480

Answer key

1. **C** - $3+6+8+11=28$ and $28\div 4=7$. The value 7.5 is the median, and 28 is the sum.
2. **B** - Order the data first: 2, 3, 9, 12. The median is $\frac{3+9}{2}=6$. The value 6.5 is the mean.
3. **D** - $30-9=21$. The range is the greatest value minus the least value.
4. **A** - $IQR=Q_3-Q_1=20-12=8$. Adding the quartiles gives 32.
5. **D** - The distances add to 10, and $10\div 5=2$. The value 10 is the sum, not the mean of the distances.
6. **D** - The median depends only on the middle of the ordered data. The mean changes when any value changes.
7. **A** - The total must be $5\times 11=55$. The four values add to 40, and $55-40=15$.
8. **C** - A smaller MAD means the values stay closer to the mean, so Team A is more consistent.
9. **B** - The median and IQR are not pulled far by an outlier. The mean, MAD, and range all change a lot.
10. **A** - The total is the mean times the number of scores: $6\times 85=510$. Using 5 scores gives 425.

Remember:

- Mean: sum of the values divided by the number of values.
- Median: the middle value of the ordered data.
- Range is maximum minus minimum; $IQR=Q_3-Q_1$.
- MAD is the mean of the distances of the values from the mean.
- An outlier changes the mean much more than the median.