

# Measures of Center and Spread

TSIA2 Math •Section 10.1

Name: _____	Date: _____	Score: _____ / 12
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**Quick Review and Helpful Hints**

Data questions are about choosing the right summary. Read the labels carefully, identify the total or condition being used, and connect each statistic to what it tells about the data.

▷ **Example:** Find the mean of 6, 8, 10, 12.

**Work:** Add the values to get 36, then divide by 4 values.

★ **Answer:** 9

◆ **Practice Problems**

Solve each problem. Show enough work that another student could follow your thinking.

- |   |  |
|---|--|
| <p>1. Find the mean of 4, 8, 10, 14. _____</p> <p>2. Find the median of 5, 7, 11, 13, 20. _____</p> <p>3. Find the mode of 2, 3, 3, 4, 5, 5, 5. _____</p> <p>4. Find the range of 12, 15, 18, 25. _____</p> <p>5. Find MAD for 2, 4, 6. _____</p> | <p>6. Find IQR if <math>Q_1 = 6, Q_3 = 19</math>. _____</p> <p>7. Which measure is most affected by an outlier? _____</p> <p>8. Find the median of 8, 10, 12, 14. _____</p> <p>9. Find the mean of 3, 3, 9, 9. _____</p> <p>10. Which is better for skewed data: median or mean? _____</p> |
|---|--|

◆ **Word Problems**

11. A student scores 80, 85, 90. Find the mean. \_\_\_\_\_
12. A data set has an outlier far above the rest. Which center should you report? \_\_\_\_\_



## Answer Keys

- |                  |            |
|------------------|------------|
| 1. 9             | 7. Mean    |
| 2. 11            | 8. 11      |
| 3. 5             | 9. 6       |
| 4. 13            | 10. Median |
| 5. $\frac{4}{3}$ | 11. 85     |
| 6. 13            | 12. Median |

### Step-by-Step Explanations

- The mean shares everything out evenly — total the values to 36, then split among the 4 of them.
- Once the list is ordered, the median is simply the value standing in the middle — that's 11.
- The mode is the crowd favorite — whichever value shows up most often, and 5 appears three times.
- Range is all about spread: take the largest minus the smallest,  $25 - 12 = 13$ .
- First find the mean, 4; each value sits 2, 0, 2 away, and averaging those distances gives  $\frac{4}{3}$ .
- The IQR measures the middle half of the data — just compute  $Q_3 - Q_1 = 19 - 6 = 13$ .
- The mean has to account for every value, so one extreme number can yank it far off — the median barely budes.
- With four values there's no lone middle, so average the inner two:  $(10 + 12)/2 = 11$ .
- Add it all up to 24, then divide by the 4 values — the mean settles right at 6.
- When data leans to one side, the median holds steady while the mean gets dragged toward the tail.
- Sum the three scores to 255, then divide by 3 to get the average of 85.
- When one value is way out of line, the median gives a more honest sense of the typical value.



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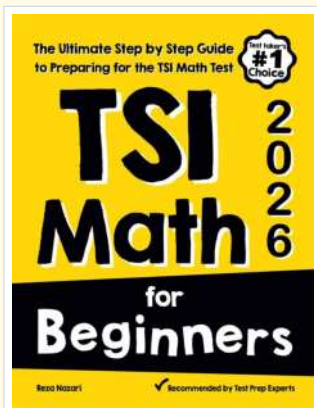
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