

Measures of Center and Spread

PERT Math • Section 10.1

Name: _____

Date: _____

Score: _____ / 12

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.

1. Find the mean of 4, 8, 10, 14.

2. Find the median of 5, 7, 11, 13, 20.

3. Find the mode of 2, 3, 3, 4, 5, 5, 5.

4. Find the range of 12, 15, 18, 25.

5. Find MAD for 2, 4, 6.

6. Find IQR if $Q_1 = 6$, $Q_3 = 19$.

7. Which measure is most affected by an outlier?

8. Find the median of 8, 10, 12, 14.

9. Find the mean of 3, 3, 9, 9.

10. Which is better for skewed data: median or mean?

◆ 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 budges.
- 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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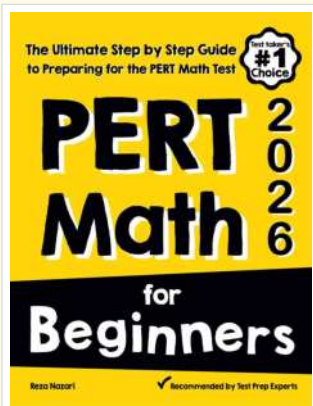
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