

Statistics and Data Displays: math test solutions, Grade 6 – download the PDF

Test solutions with the detailed point scale. Add up your points and spot what to review.

Suggested time: 45 minutes. Out of 20 points. Calculator allowed only when the problem says so.

1 Statistical questions

/ 3 pts

- a. Not statistical: the answer is a single count (1 pt).
- b. Not statistical: the answer is always 5 (1 pt).
- c. Statistical: students send different numbers of messages, so there is variability (1 pt).

2 Measures of center and range

/ 4 pts

In order: 9, 10, 11, 12, 14, 15, 15, 15, 16.

Mean: $117 \div 9 = 13$ (1 pt). Median: the 5th value, 14 (1 pt). Mode: 15, which appears 3 times (1 pt). Range: $16 - 9 = 7$ (1 pt).

3 Five-number summary

/ 4 pts

Median: the mean of the 5th and 6th values, $\frac{10 + 12}{2} = 11$ (1 pt). Lower half: 4, 6, 7, 9, 10, so $Q_1 = 7$. Upper half: 12, 13, 15, 16, 20, so $Q_3 = 15$ (1 pt).

Summary: 4, 7, 11, 15, 20 (1 pt). IQR = $15 - 7 = 8$ and range = $20 - 4 = 16$ (1 pt).

4 Mean absolute deviation

/ 3 pts

Mean: $45 \div 5 = 9$ (1 pt). Distances from 9: 4, 2, 1, 1, 6 (1 pt). Sum 14, so $MAD = 14 \div 5 = 2.8$ (1 pt).

5 Reading a histogram

/ 3 pts

- a. $3 + 7 + 6 + 4 = 20$ games (1 pt).
- b. Bins 0–10 and 10–20: $3 + 7 = 10$ games (1 pt).
- c. The bin 30–40 has 4 games: $\frac{4}{20} = \frac{1}{5}$ (1 pt).

6 Choosing a measure of center

/ 3 pts

Sum: $12 + 13 + 13 + 14 + 15 + 16 + 43 = 126$. Mean: $126 \div 7 = 18$ (1 pt). Median: the 4th value, 14 (1 pt).

The median is better: six of seven students took 16 minutes or less, and the single 43 minute outlier pulls the mean up (1 pt).



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