Mean, Median, Mode and Range: Complete Guide

MEMORANDUM

Name: ..... Class: .....

Date: .....

MARK ____ / 29

Answer all questions. Show all your working — marks are awarded for method as well as the final answer. **Teacher copy: accept any correct equivalent method.**

1 The mean of 7, 11, 9, 13 and x is 11. Solve for x. **(3)**

$\frac{7+11+9+13+x}{5} = 11$ *(1)*

$40 + x = 55$ *(1)*

$\boldsymbol{x = 15}$ *(1)* ✓✓✓ (3)

2 The mean of 14, 22, 18 and x is 20. Solve for x. **(3)**

$\frac{14+22+18+x}{4} = 20$ *(1)*

$54 + x = 20 \times 4 = 80$ *(1)*

$\boldsymbol{x = 80 - 54 = 26}$ *(1)* ✓✓✓ (3)

3 The mean of 8, 10, 15, 9 and x is 12. Solve for x. **(3)**

$\frac{8+10+15+9+x}{5} = 12$ *(1)*

$42 + x = 12 \times 5 = 60$ *(1)*

$\boldsymbol{x = 60 - 42 = 18}$ *(1)* ✓✓✓ (3)

4 Find the mean of 3, 5, 10, 2 *(mean)* **(2)**

$20 \div 4 = \mathbf{5}$ ✓✓ (2)

5 Find the mean of 12, 15, 18, 15 *(mean)* **(2)**

$60 \div 4 = \mathbf{15}$ ✓✓ (2)

6 Find the median of 8 ; 3 ; 9 ; 5 ; 6 *(median, odd)* **(1)**

Order: 3 ; 5 ; 6 ; 8 ; 9 → **6** ✓ (1)

7 Find the median of 4 ; 10 ; 6 ; 8 *(median, even)* **(2)**

Order: 4 ; 6 ; 8 ; 10 → $(6 + 8) \div 2 = \mathbf{7}$ ✓✓ (2)

8 Find the mode of 2, 4, 4, 4, 7, 9 *(mode)* **(1)**

> **4** (appears three times) ✓ (1)

9 Find the range of 15, 22, 9, 30 *(range)* **(1)**

> $30 - 9 = \mathbf{21}$ ✓ (1)

10 The mean of 4, 8, x, 6 is 7. Find x. *(missing value)* **(3)**

> Total $7 \times 4 = 28$; $28 - 18 = \mathbf{10}$ ✓✓✓ (3)

11 The mean of 5 numbers is 12. What is their total? *(work back)* **(2)**

> $12 \times 5 = \mathbf{60}$ ✓✓ (2)

12 Data: 6, 6, 7, 8, 40. Which is more typical, mean or median? *(outlier)* **(2)**

> Mean 13,4 vs median 7 → **median** (40 is an outlier) ✓✓ (2)

13 Find all four (mean, median, mode, range) for 2, 3, 3, 6 *(all four)* **(4)**

> Mean $14 \div 4 = 3{,}5$; median $(3 + 3) \div 2 = 3$; mode 3; range $6 - 2 = \mathbf{4}$ ✓✓✓✓ (4)

TOTAL: 29 marks

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