Worked answers | Statistics

Mean/median and variability

6 questions | 12 marks

Equivalent correct methods earn the corresponding marks.

1. Values 1, 3, 5 have frequencies 2, 3, 1. Find mean. [2 marks]

Weighted total 16 divided by count 6.

Answer: $\frac{8}{3} \approx 2.67$.

2. Ten people average 6; thirty average 10. Find combined mean. [2 marks]

Total $10(6) + 30(10) = 360$; count 40.

Answer: 9.

3. Values 2, 5, 8 have frequencies 2, 3, 1. Find median. [2 marks]

Ordered data 2, 2, 5, 5, 5, 8.

Answer: 5.

4. For the full population 3, 3, 7, 7, find mean and SD. [2 marks]

Squared deviations total 16; $\sqrt{\frac{16}{4}} = 2$.

Answer: Mean 5; population SD 2.

5. All values multiply by 3. What happens to mean and SD? [2 marks]

Distances from the mean triple.

Answer: Both multiply by 3.

6. A calculator shows $\sigma = 4.0$ and $s = 4.2$. Which is sample SD? [2 marks]

Use s, with the original variable’s units.

Answer: 4.2.