Outliers and fair conclusions

6 questions | 12 marks

Equivalent correct methods earn the corresponding marks.

1. Find fences for $Q_1 = 12$, $Q_3 = 20$. [2 marks]

IQR 8; subtract/add 12.

Answer: 0 and 32.

2. A value equals the upper fence 32. Is it flagged by the strict outside rule? [2 marks]

The rule uses values above, not equal to, the fence.

Answer: No.

3. Source confirms 1.75 m entered as 1.75 cm. What correction? [2 marks]

It is a verified unit mismatch.

Answer: 175 cm, documenting the unit correction.

4. Find mean and median of 3, 4, 4, 5, 24. [2 marks]

Total 40 divided by count 5; third value 4.

Answer: Mean 8; median 4.

5. Slow runners are removed to improve mean race time. Explain the problem. [2 marks]

Exclusion cannot be justified by wanting a nicer result.

Answer: Selective removal of genuine outcomes biases the description.

6. Results change greatly without one genuine extreme. What should be reported? [2 marks]

Readers need to see the sensitivity.

Answer: Both relevant results, the treatment rule and a cautious conclusion.