Comparing two or more groups

6 questions | 12 marks

Equivalent correct methods earn the corresponding marks.

1. Scores A median 25/IQR 6; B median 29/IQR 10. Compare. [2 marks]

Use centre and spread separately.

Answer: B has median 4 points higher but wider middle-half spread.

2. Why should two travel histograms share a horizontal scale? [2 marks]

The same minutes should occupy the same width.

Answer: Otherwise equal time differences can appear different.

3. Compare one class before exams with another during holidays. Name a limitation. [2 marks]

Use comparable periods or qualify the inference.

Answer: Time conditions differ and may affect sleep/study observations.

4. Groups have means 10, 12 and SDs 4, 1. Compare. [2 marks]

The SD comparison is not a sample-size statement.

Answer: Second group has higher mean and tighter concentration around it.

5. Does a random sample of 80 necessarily give a closer mean than a sample of 8? [2 marks]

Larger samples generally reduce random variation but cannot guarantee exactness.

Answer: No, not for every realised sample.

6. A report says only “A is better”. Improve the approach. [2 marks]

A value judgement needs a defined criterion and evidence.

Answer: Name the outcome and compare specific medians/IQRs or justified summaries.