

Measures of Central Tendency

Chapter 12: Statistics · Topic 2

Key Concept

For grouped data, mean can be calculated using the direct method (sum of frequency $\times$ midpoint, divided by total frequency), the assumed mean method (simplifying calculation by measuring deviations from an assumed central value), or the step-deviation method (further simplifying by dividing deviations by a common class width). Each measure has different strengths: mean is sensitive to extreme outlier values, while median and mode are more resistant to being skewed by unusually large or small values in the data set.

Quick Revision Notes

- Mean = sum of all values $\div$ count. Median = middle value when data is ordered. Mode = most frequent value.
- Mean can be calculated using direct, assumed mean, or step-deviation methods for grouped data.
- Mean is sensitive to extreme outlier values.
- Median and mode are more resistant to being skewed by outliers.

Practice Questions

- 1 Find the mean of the data: 4,8,6,10,2.
- 2 Find the median of the data set: 3,7,2,9,5 (arrange in order first).
- 3 Explain why the median is often preferred over the mean when a data set has extreme outliers.