

Comparing Distributions Using Median and IQR, and Sampling Methods

Year 11 · Statistics · y11-stat

Name: _____

Date: _____

Class: _____

Score: ____ / ____

Instructions

Answer every question in Practice. Try the Challenge section once Practice is complete. 10 questions in total.

Practice

1. Dataset A has median 54. Dataset B has median 47. Which dataset has the higher median?

2. Dataset A has $Q1 = 18$ and $Q3 = 45$ ($IQR = 27$). Dataset B has $Q1 = 15$ and $Q3 = 52$ ($IQR = 37$). Which dataset has the wider spread (larger IQR)?

3. Every 10th name on an alphabetical list is selected for a sample. What sampling method is this?

4. A distribution has a long tail stretching to the right (towards higher values), with most data bunched at the lower end. Is this positively or negatively skewed?

5. A dataset has $Q3 = 40$ and $Q1 = 25$. What is the interquartile range?

6. The higher median means the middle value of that dataset is larger. Dataset A has median 38. Dataset B has median 45. Which dataset has the higher median?

7. A larger IQR means the middle 50% of the data is more spread out. Dataset A has $Q1 = 25$ and $Q3 = 40$ ($IQR = 15$). Dataset B has $Q1 = 12$ and $Q3 = 48$ ($IQR = 36$). Which dataset has the larger IQR?

8. Random sampling means every member of the population has an equal chance of being chosen, often using a random number generator. What sampling method is being described here?

Challenge

1. A dataset has $Q3 = 58$ and $Q1 = 20$. What is the interquartile range?

2. In a distribution where the mean is greater than the median, the long tail stretches towards higher values. Is this distribution positively or negatively skewed?
