

Standard Deviation and Stratified Sampling

Year 10 · Statistics · y10-stat

Name: _____

Date: _____

Class: _____

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Instructions

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

Practice

1. A dataset has variance 16. What is the standard deviation? (sqrt 16)
2. A population of 800 is split into strata of 300 and 500. A stratified sample of 80 is taken. How many should come from the stratum of 300? ($\frac{300}{800} \times 80$)
3. The mean tells you the average value of a dataset. Which measure tells you how spread out the values are around that average: the mean, or the standard deviation?
4. A dataset is 2, 4, 4, 4, 5, 5, 7, 9 with mean 5. Find the variance (the mean of the squared deviations from the mean).
5. A population of 1000 has a stratum of 400. A stratified sample of 50 is taken. How many should come from this stratum? ($400/1000 \times 50$)
6. Standard deviation is the square root of the variance, not the variance itself. A dataset has variance 9. What is the standard deviation?
7. The mean measures the centre of the data, not its spread. Which measure below correctly describes how spread out the values are: the mean, or the standard deviation?
8. Each stratum's sample size must match its proportion of the whole population: stratum size $\div$ population $\times$ sample size. A population of 1200 has a stratum of 700. A stratified sample of 60 is taken. How many should come from this stratum?

Challenge

1. A dataset is 3, 3, 7, 7 with mean 5. Calculate the variance (mean of squared deviations), then find the standard deviation (square root of the variance).

2. A dataset has variance 1.44. What is the standard deviation?
