Variance: calculation, stability and transformations

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Worked example 1

Find the descriptive variance of $\{2, 4, 4, 6\}$, using the number of observations as the denominator. Show the mean first.

Guided attempt 2

Find the descriptive variance of $\{1, 3, 5\}$, using the number of observations as the denominator. Show the mean first.

1. Mean = $\frac{1+3+5}{3} = \square$.
2. Deviations: $1 - \square$, $\quad 3 - \square$, $\quad 5 - \square$.
3. Squared total = $(-2)^2 + 0^2 + 2^2 = \square$; variance = $\frac{\square}{3}$.

Prerequisite 3

Find the mean of $\{2, 4\}$. Show the relevant ordering or calculation.

Prerequisite 4

The reference mean is 5. Find the sum of squared deviations for 3,5,7.

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Independent practice 5

Find the descriptive variance of $\{1, 1, 3, 3\}$, using the number of observations as the denominator. Show the mean first.

Independent practice 6

Find the descriptive variance of $\{2, 2, 2\}$, using the number of observations as the denominator. Show the mean first.

Independent practice 7

Group A is 4,5,6 and group B is 3,5,7. Check both means, compare both n-denominator variances, and decide which set is more stable on the same scale.

Independent practice 8

Find the descriptive variance of $\{0, 2, 4\}$, using the number of observations as the denominator. Show the mean first.

Exit question 9

Find the descriptive variance of $\{1, 3\}$, using the number of observations as the denominator. Show the mean first.

Exit question 10

Find the descriptive variance of $\{5, 5, 5, 5\}$, using the number of observations as the denominator. Show the mean first.