Variance: calculation, stability and transformations — Further practice

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Further practice 11

The data 2,4,4,6 have variance 2. Add 3 to every value. Find the new variance and explain the unchanged deviations.

Further practice 12

The data 2,4,4,6 have variance 2. Multiply every value by 2. Find the new variance and explain the scale factor.

Further practice 13

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

Further practice 14

Values 1 and 3 each occur twice. Find the mean and n-denominator variance, counting all four observations.

Value	Frequency / weight
1	2
3	2

Use the stated conditions and the labelled scales.

Extension 15

The data 1,1,5,5 have mean 3. Find their variance and explain why knowing the mean alone does not determine spread.

Extension 16

For this chapter’ s descriptive variance of 2,4, a learner divides the squared-deviation total 2 by n−1 and reports 2. Correct the calculation under the stated n-denominator definition.