Understand simulations of sampling distributions and the effect of increasing sample size

Key knowledge | Free preview

Learning target: Understand simulations of sampling distributions and the effect of increasing sample size.

A sampling distribution records a statistic across repeated samples, not all individual observations in one sample. Small finite populations can be enumerated to produce an exact benchmark for a simulation. Sampling with replacement makes the draws independent and keeps their probabilities constant from one draw to the next.

Try the mathematics

Task 1. Draw twice independently with replacement from {0,2,4,6}, each value equally likely. Enumerate the 16 ordered pairs and tabulate their sample means. Find the mean and variance of that sample-mean distribution.

Continue with the full worksheet

The complete resource has 2 focused task sets and substantive worked solutions. Use an exercise book or print the A4 worksheet. This preview shows the first task without its full solution.

Find this resource: https://resources.aspiretopowerlearning.com.au/vce/skills/sm-u2-o1-kk-02/

Study-design reference

VCE Mathematics Study Design 2023-2027, version 1.1 (November 2022). Specialist Mathematics; Unit 2; Outcome 1; Key knowledge; bullet 2; p. 69.

The learning target is a concise paraphrase. Aspire reference: sm-u2-o1-kk-02. This is an internal identifier, not an official VCAA code.

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