Simulating sample proportions and intervals

Key skills | Free preview

Learning target: Simulate repeated samples at several population proportions and sample sizes, interpreting sample-proportion distributions and confidence-interval variation.

Repeated sampling makes the distribution of a statistic visible. Keep the population proportion fixed for a run while generating many independent samples of the same size, then change one parameter at a time. Store proportions and interval endpoints for each sample. Compare observed patterns with theoretical mean and spread, while allowing for variation in the simulation itself.

Try the mathematics

Task 1. Design and implement 200 independent samples for each combination p=0.3 or 0.6 and n=100 or 400. Give a spreadsheet or pseudocode procedure that records each proportion and its approximate 95% interval.

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/aspire-mm-u34-o1-ks-19/

Study-design reference

VCE Mathematics Study Design 2023-2027, version 1.1 (November 2022). Mathematical Methods; Units 3–4; Outcome 1; Key skills; bullet 19; p. 103.

The learning target is a concise paraphrase. Aspire reference: aspire-mm-u34-o1-ks-19. This is an internal identifier, not an official VCAA code.

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