Construct the specified exact-normal or approximate confidence intervals for mean inference

Key skills | Free preview

Learning target: Construct the specified exact-normal or approximate confidence intervals for mean inference.

A confidence interval estimates a population mean through a repeatable construction. Its width reflects the standard error and chosen confidence level. Check whether population standard deviation is known and whether normality or large-sample assumptions justify the formula. Confidence describes the method’s repeated coverage, not a probability assigned to a fixed parameter after observing one interval.

Try the mathematics

Task 1. An independent random sample from a normal population gives $\bar{x}=52$, known $\sigma=8$ and $n=64$. Use $z=1.96$ for a 95% interval. Interpret it and explain the effect of increasing n to 256 with the same σ.

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-u34-o1-ks-16/

Study-design reference

VCE Mathematics Study Design 2023-2027, version 1.1 (November 2022). Specialist Mathematics; Units 3–4; Outcome 1; Key skills; bullet 16; p. 115.

The learning target is a concise paraphrase. Aspire reference: sm-u34-o1-ks-16. This is an internal identifier, not an official VCAA code.

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