

Solutions

2.1 Standard error= $\sigma/\sqrt{n}=10/10=1$.

2.2 Lower endpoint= $50-1.96\times 1=48.04$ under the stated known- σ normal model.

2.3 Chi-square= $(30-25)^2/25+(20-25)^2/25=1+1=2$.

2.4 False. A 95% confidence procedure does not give a 95% probability that a fixed population mean moves within this one interval. Expected counts and estimated parameters affect the validity and degrees of freedom of chi-square tests.

2.5 A An interval calculated by a procedure designed to cover the population parameter at a stated long-run rate.

3.1 SE 1:48.04 to 51.96. At $n=400$, SE 0.5:49.02 to 50.98. The procedure covers the fixed population mean in 95% of repeated samples under assumptions; it does not assign 95% probability to the fixed mean after observing this interval.