Homework Answers

Lecture 13

Confidence Interval for a Mean (Population Std. Deviation Known)

Problem: For a certain sample of size *n = 64*, the sample mean is .

We know the population standard deviation is = 8.

Set up a 99% confidence interval for the population mean, *µ*.

*p* = 0.99

α = 1 – 0.99 = 0.01

α/2 = .005

Area in lower tail = 0.005
Area in upper tail = 0.005

*zL* = norm.s.inv (.005) = –2.576

*zU* = norm.s.inv (.995) = 2.576

Lower limit of CI = = 85 – (2.576 × 1) = 82.424

Upper limit of CI = = 85 + (2.576 × 1) = 87.576

