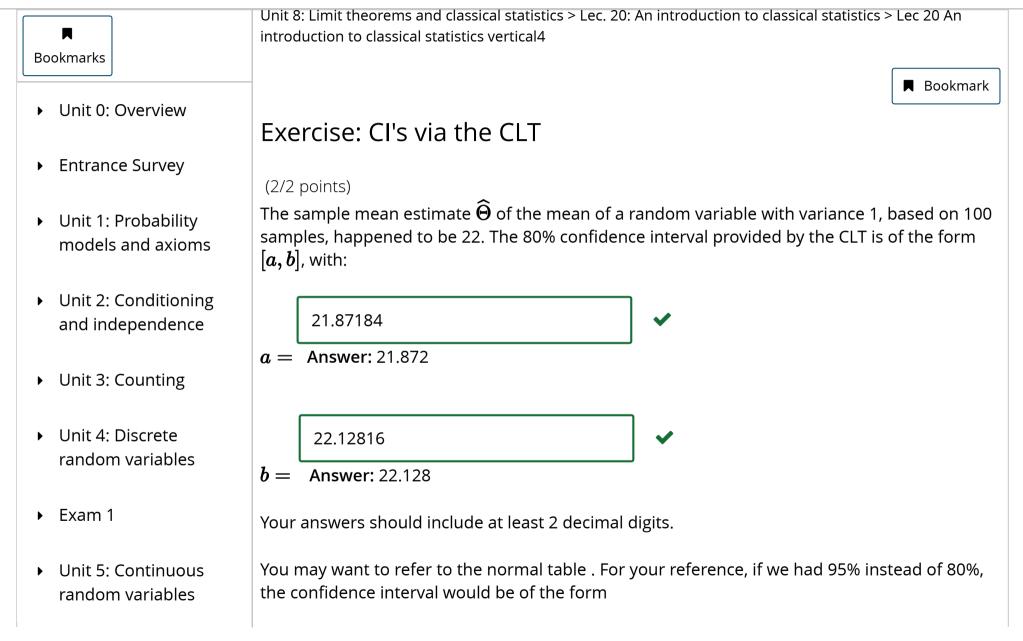


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- Unit 6: Further topics on random variables
- Unit 7: Bayesian inference
- ▶ Exam 2
- ▼ Unit 8: Limit theorems and classical statistics

Unit overview

Lec. 18: Inequalities, convergence, and the Weak Law of Large Numbers

Exercises 18 due Apr 27, 2016 at 23:59 UTC

Lec. 19: The Central Limit Theorem (CLT)

Exercises 19 due Apr 27, 2016 at 23:59 UTC

Lec. 20: An introduction to classical statistics

Exercises 20 due Apr 27, 2016 at 23:59 UTC

$$\Big[\widehat{\Theta} - rac{1.96\sigma}{\sqrt{n}}, \widehat{\Theta} + rac{1.96\sigma}{\sqrt{n}}\Big].$$

Answer:

The number 1.96 for the 95% confidence interval was chosen because we wanted to have 2.5% probability at either tail of the normal, and using the fact $\Phi(1.96)=0.975$. In this case, we want to have 10% probability at each tail, and we need to find a value z such that $\Phi(z)=0.9$. From the normal table, the closest choice is z=1.28. We therefore obtain

$$\Big[\widehat{\Theta} - rac{1.28\sigma}{\sqrt{n}}, \widehat{\Theta} - rac{1.28\sigma}{\sqrt{n}}\Big],$$

or

$$[22 - 1.28/10, 22 + 1.28/10] = [21.872, 22.128].$$

You have used 1 of 2 submissions

Solved problems

Additional theoretical material

Problem Set 8

Problem Set 8 due Apr 27, 2016 at 23:59 UTC

Unit summary

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