Confidence Interval Concept Check 5

2/2 points (graded)

Based on some data gathered by your company, you produce a (realization of a) confidence interval $[0.34, 0.57]$ that has (asymptotic) level 95%. Upon presenting your data and confidence interval to your employers, they ask you two questions:

Can the interval $[0.34, 0.57]$ also be used as a (realization of a) confidence interval of (asymptotic) level 98 % ?

- Yes
- No ✔

Can the interval $[0.34, 0.57]$ also be used as a (realization of a) confidence interval of (asymptotic) level 90 % ?

- Yes ✔
- No

Solution:

A confidence interval $\mathcal{I}$ at level 95% for the parameter p satisfies

$$\mathbf{P}\left[\mathcal{I} \ni p\right] \geq 0.95 \geq 0.90.$$

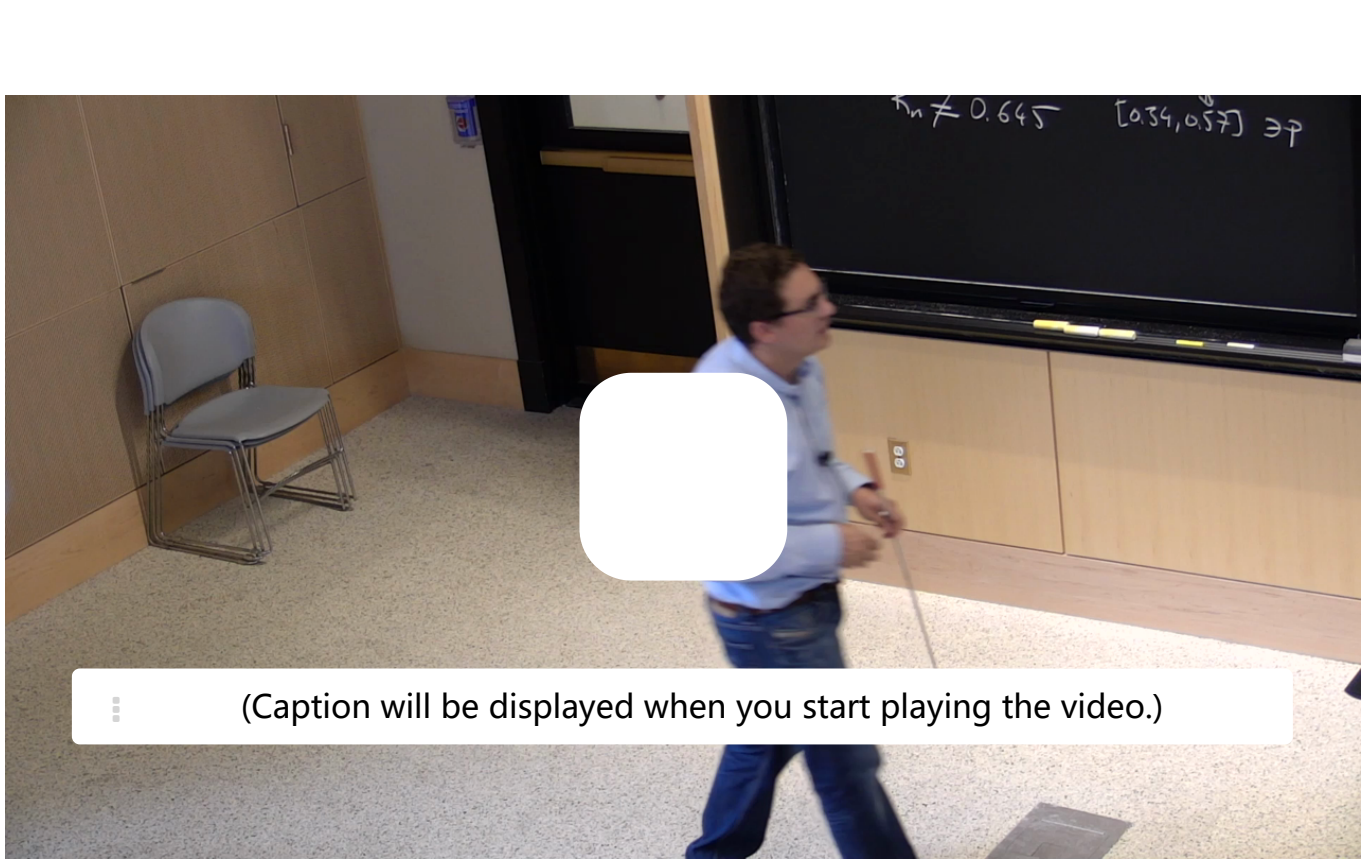
By definition, $\mathcal{I}$ is also a confidence interval of (asymptotic) level 90%.

However, a confidence interval at level 95% may be too small to also be a confidence interval at level 98%. Hence, the first statement is not true in general: the answer to the first question is "No."

提交 你已经尝试了1次（总共可以尝试1次）

Answers are displayed within the problem

Confidence Interval Concepts Review (Continued)



interval is now

a 95% confidence interval for an unknown P,

is it also a 98% confidence interval?

Yes.

Yeah.

No, right because the other way around definitely

works, but this way just does not.

So that's probably the next question.

So if now if I have a 95% confidence interval,

is it also a confidence interval at a lower confidence level?

Yes.

I'm just surrendering width, right.

I'm surrendering accuracy by using a 95% confidence

interval to make a 90% confidence statement.

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