

ECO 602 Fall 21
Oct 28, 2021

In Class Assignment: CI Intervals

Members: Chloe Lang, Megan Mitchell, Amira Spikes, Julio Canas

Q1 (1 pt.): Calculate the critical z-values for a 90% CI of the standard normal distribution. Show the R-code you used to perform the calculation.

```
> z_lower<-qnorm(0.05, mean=0, sd=1)
```

```
> z_lower
```

```
[1] -1.644854
```

```
> z_upper<-qnorm(0.95, mean=0, sd=1)
```

```
> z_upper
```

```
[1] 1.644854
```

Q2 (1 pt.): Consult the help entry for qt() and calculate the critical values for df = 10. Show the R-code you used to perform the calculation.

```
qt(0.95, df = 10, lower.tail = TRUE, log.p = FALSE)
```

```
= 1.812461
```

Q3 (2 pts.): How many degrees of freedom are required for the 0.025% lower critical value of a t-distribution to match the 0.025% lower critical z-value (from the standard normal) to within one decimal place? Show the R-code you used to perform the calculation.

My guess is this: qt(0.05, 85)

```
[1] -1.662978
```

Q4 (1 pt.): How many degrees of freedom are required for the 0.025% lower critical value of a t-distribution to match the 0.025% lower critical z-value (from the standard normal) to within two decimal places? Show the R-code you used to perform the calculation.

Q5 (2 pts.): What are the critical t-values you would need to know to construct a 95% CI on the mean?

Q6 (3 pts.): Construct the interval. Show the R-code you used to perform the calculation.

Feedback:

Amira: It took a minute for us to construct our group on zoom in the breakout rooms then review the assignment at the same time. Once we got into the motion we were able to answer the questions. Time was the biggest constraint for us.

Megan: Our team struggled a bit getting through all of the questions, but we understood Q1 and Q2 pretty well and just needed more time to get through the assignment. I was confused about Q3 and how to answer it.

Chloe: Conceptually, I had a hard time understanding what values we were using and why we were using them. Once I was able to understand it better, I felt I could answer the questions but unfortunately we ran out of time. We made it to question 3.