Statistical Method

Homework 5

At most two members work together to submit answers on Moodle.
Due data: 23:59, November 06, 2023

Given the sepal width of "iris" data, use the following steps to show **if the mean of sepal width is 3**. Assume the sepal widths are random samples from a normal distribution.

(a) Use the maximum likelihood estimation method to estimate the model parameters of the normal distribution.

(b) According to the question "**if the mean of sepal width is 3**", what is the estimate for the quantity of interest?

(c) Construct the 95% confidence interval for the the true quantity of interest by bootstrapping.

(d) Based on the 95% confidence interval in (c), how would you conclude the question "**if the mean of sepal width is 3**"?

(e) If I use a **one-sample t-test** to test if $H_0 : \mu = 3$, is the conclusion as the same as the result in (d)?