

**This is ungraded additional practice. We recommend that you work on it as study material.**

Load the `penguins` dataset into R and answer the following questions. Where code is needed, you may write it down in the space given.

**Question 1**

Fit the multiple linear regression model from today's slides, but instead having "Chinstrap" as the reference level in the `species` variable. Interpret the coefficient corresponding to the "Adelie" indicator variable in the context of the problem.

**Question 2**

Write out the mathematical equation of the line whose coefficients are given by your model output.

**Question 3**

Now, consider the relationship between bill length and bill depth when broken down by species. *Sketch* (do not code) a plot which can be used to summarize the relationship between all three variables. *Depict a shape which reflects your expectation of the phenomenon.* State the aesthetic mappings and geometry involved in the plot. Finally, label your axes and give the plot a title.