**Stat 021 Spring 2021**

**Class 10 Group Worksheet**

**Part 1**

1. There are nine variables in the `penguins2` data set. Which of these variables would you treat as categorical?

2. What does the variable `bill\_length\_standard` represent?

3. Write a scientific question for this data set that can be answered with a chi-square test of independence. State the null and alternative hypotheses of the test.

4. Write a scientific question for this data set that can be answered with a chi-square test of homogeneity. State the null and alternative hypotheses of the test.

5. Write a scientific question for this data set that can be answered with an ANOVA test. State the null and alternative hypotheses of the test.

**Part 2**

1. Copy and paste the normal probability plot, and the histogram below. What can you conclude about the ANOVA assumptions from these two plots?

2. Copy and paste a box plot for the bill length (in mm) of penguins on each of the three different islands below. What can you conclude about the ANOVA assumptions from this plot?

3. What do you predict will be the result of the ANOVA test for a difference in mean bill length across the three different islands?