

1. Let's begin practicing real data analysis: look at, plot, and analyze the data as required below. Please describe the data, your analysis, and your findings using complete sentences. Use the data set named finches found on my website. All units are in millimeters.
  - (a) Make and describe an appropriate plot for the a random variable of your choice.
  - (b) Calculate and interpret a 90% confidence interval for the numerical variable you chose above.
  - (c) Create and set up your own hypothesis test.
  - (d) Evaluate your hypothesis test appropriately.
  - (e) Calculate and interpret an appropriately matching confidence interval.
  - (f) Does your confidence interval match the conclusion from your hypothesis test?
  - (g) What does the confidence interval tell you that the hypothesis test does not?
  - (h) Describe at least three things about 14th observation in the data set.
  - (i) Is the mean or median a more appropriate descriptor of your variable. Justify your answer.
2. A 90% confidence interval for a population mean is given as (17.68, 22.02). This confidence interval is based on a simple random sample of 36 observations. Calculate the sample mean and standard deviation. Use the  $t$ -distribution in any calculations.