

Be neat when drawing any graphical displays. If you are comfortable using a software package for generating the graphs, that is also acceptable.

1. (1.5pt) Exercise 11.6, page 232.
2. (.5pt) Reconsider the example with the tips of the waiter. Assume that the percentage of tips for the waiter is (on average) lower when he puts a happy face on the check than when he does not. **Does this also necessarily imply that the total amount of his tips will (on average) be lower when he puts a happy face on the check than when he does not?** Justify your answer.
3. Use the data given in Table 11.2 (page 233) and described in Exercise 12.8 (page 232) to answer the following questions:
  - (a) (1pt) Make a frequency table using the following intervals (bins): 15-16, 17-18, 19-20, ...
  - (b) (1pt) Draw a frequency histogram using the following bins: 15-16, 17-18, 19-20, ...
  - (c) (.5pt) Calculate the sample mean  $\bar{x}$ .
  - (d) (2pt) Find the 5-number summary, the IQR, and the range.
  - (e) (1pt) Draw a boxplot.
  - (f) (.5pt) Describe the overall shape of the distribution.
4. (.5pt) Suppose there is a class of 100 students, and each student is asked to record the year marked on each coin they have with them. Would you expect the distribution of years for these coins to be symmetric, skewed left, or skewed right? Justify your choice.
5. (1.5pt) Exercise 12.14, page 258. In (a), “positions of” means “the interval containing”.
6. Use the data summary in Exercise 12.24 on pages 260-261 to answer the following:
  - (a) (1pt) Make side-by-side boxplots for Calories with Type of Hot Dog as a grouping variable.
  - (b) (1pt) Describe any similarities or differences between the distributions of the number of calories for the two hot dog types.