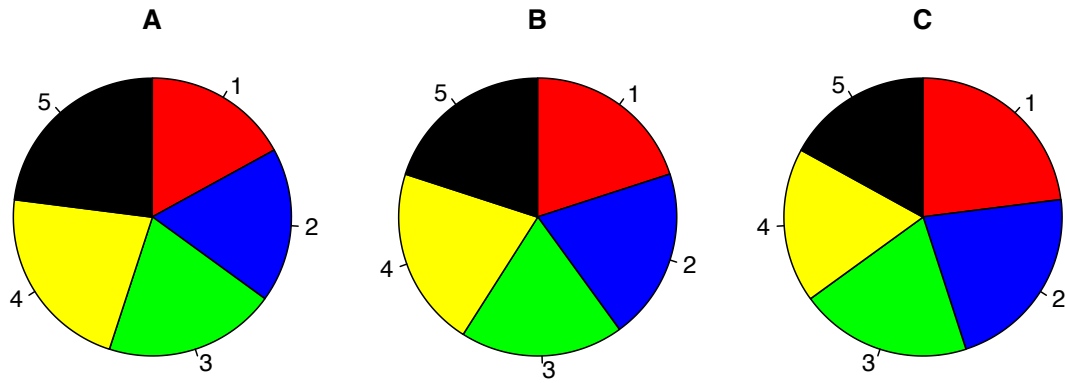


Describing Categorical (Qualitative) Data

4. Use the following pie charts to rank the categories (1–5) by size.



5. List two methods to describe the reported undergraduate majors of the class survey respondents.

6. Draw what you think the bar chart for the birth months of the survey respondents will look like.

Describing Numerical (Quantitative) Data

7. Draw what you think the histogram for “Websites Visited per Day” will look like.

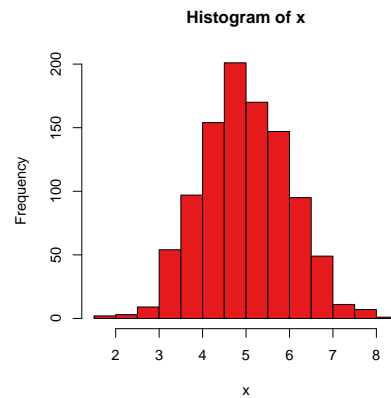
8. Draw what you think the histogram for “Dinners per Month” will look like.

9. Draw what you think the histogram for “Interest in this Class” will look like.

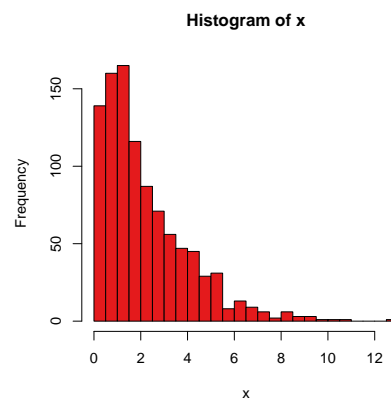
Measures of Central Tendency

10. Here are some histograms. Estimate the mean and median of the data.

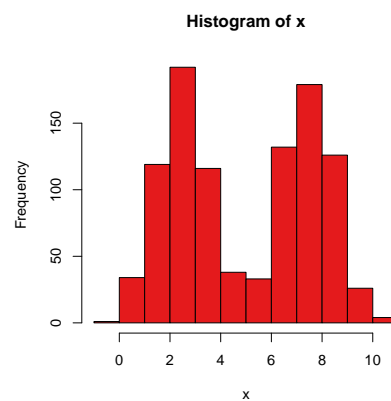
(a) Symmetric and mound-shaped data.



(b) Skewed data.



(c) Bimodal data.



11. For the examples (a)–(c) of the previous problem, which is appropriate, the mean or the median?

Standard Deviation and The Empirical Rule

12. Forty-three respondents to the class survey reported their GMAT scores. The mean score was 710, and the standard deviation was 35. What can you say about the range of scores reported? Assume that the distribution of reported scores is symmetric and mound-shaped.
13. The mean reported expected starting salary was \$120K and the standard deviation was \$25K.
- Complete the following statement with appropriate values for X and Y : “Approximately 95% of the survey respondents have expected starting salaries between X and Y .”
 - What assumptions do you need to make for the statement in (a) to be correct? Do you think these assumptions are plausible? How could you check this?
 - What can we do if the assumptions needed in part (b) are not satisfied?

***z*-scores**

14. Your company has an annual profit of \$60MM with a standard deviation of \$5MM. Assume that the distribution of your annual profits is symmetric and mound-shaped.
- (a) Would it be unusual for your company to have an annual profit of \$52MM?

 - (b) Would it be unusual for your company to have an annual profit of \$83MM?
15. Forty-seven respondents from the class survey reported their expected starting salaries. The histogram of these responses was approximately bell-shaped. The mean and standard deviation (in \$1K/year) was $\bar{x} = 120$ and $s = 25$. How many standard deviations above or below the mean are the following values?
- (a) A starting salary of \$200K.

 - (b) A starting salary of \$100K.

 - (c) A starting salary of \$170K.
16. In the previous problem, which of the values are unusual?