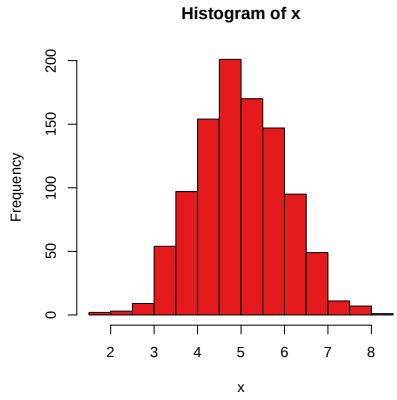
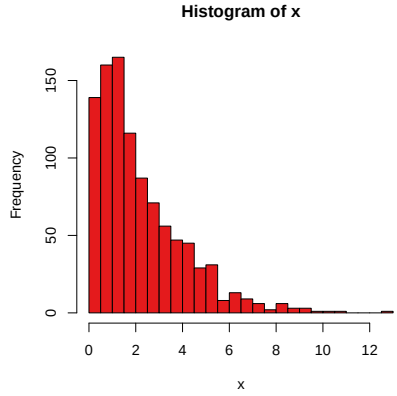
Descriptive Statistics 2
COR1-GB.1305 – Statistics and Data Analysis

Measures of Central Tendency

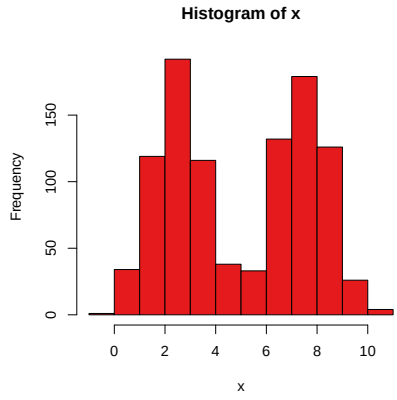
1. Here are some histograms. Estimate the mean and median of the data.
   (a) Symmetric and mound-shaped data.



   (b) Skewed data.



   (c) Bimodal data.



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

Standard Deviation and The Empirical Rule

3. Forty-two respondents to the class survey reported their GMAT scores. The mean score was 670, and the standard deviation was 40. What can you say about the range of scores reported? Assume that the distribution of reported scores is symmetric and mound-shaped.

4. The mean reported interest level in the course (out of 10) was 7.2, and the standard deviation was 1.7.

   (a) Complete the following statement with appropriate values for X and Y: "Approximately 95% of the survey respondents have interest levels between X and Y."

   (b) 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?

   (c) What can we do if the assumptions needed in part (b) are not satisfied?

z-scores

5. 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?

6. Fifty respondents from the class survey reported the number of websites they visit on a daily basis. The histogram of these responses was approximately bell-shaped. The mean and standard deviation was was $\bar{x} = 11$ and $s = 7$. How many standard deviations above or below the mean are the following values?
   (a) Visiting 100 websites per day.

   (b) Visiting 2 websites per day.

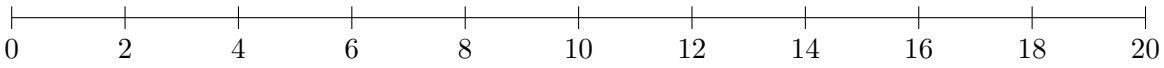
   (c) Visiting 30 websites per day.

7. In the previous problem, which of the values are unusual?

Boxplots

8. Here are the 26 reported answers to the question "How many times do you go out to dinner in a typical month" for the female respondents. The quartiles are shown in bold. Make a boxplot of the data.

1.5, 2, 2, 3, 4, 4, 4, 5, 5, 5, 6, 6, **6**, **6**, 8, 8, 8, 8, 8, 8, 8, 10, 10, 12, 12, 12



9. Here are the answers for the 29 male survey respondents. The middle value is shown in bold. Make a boxplot of the data.

2, 3, 4, 4, 4, 4, 5, 5, 5, 5, 5, 6, 8, 8, **8**, 8, 8, 8, 8, 9, 9, 10, 10, 10, 10, 12, 12, 15, 20