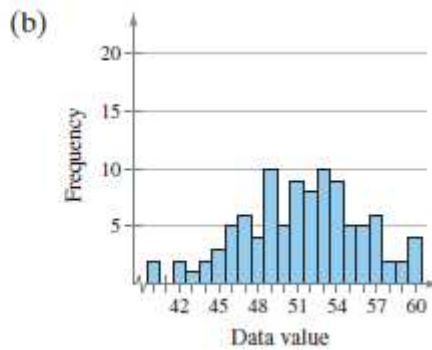
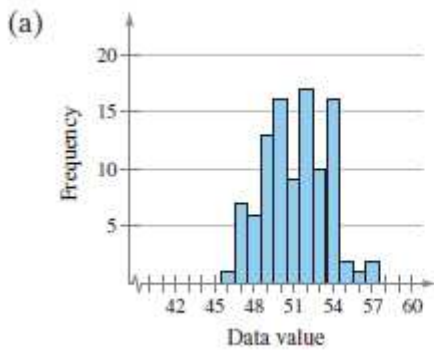
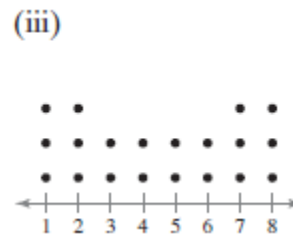
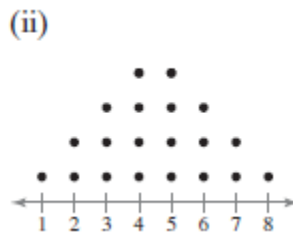
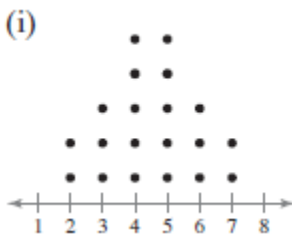


- Why is the standard deviation used more frequently than the variance?
(Hint: Consider the units of the variance.)
- Describe the difference between the calculation of population standard deviation and that of sample standard deviation.
- Given a data set, how do you know whether to calculate σ or s ?
- Both data sets have a mean of 50. One has a standard deviation of 2.4, and the other has a standard deviation of 5. By looking at the graphs, which is which? Explain your reasoning.



- Compare three data sets. (a) Without calculating, determine which data set has the greatest sample standard deviation and which has the least sample standard deviation. Explain your reasoning. (b) How are the data sets the same? How do they differ?



- You are applying for jobs at two companies. Company A offers starting salaries with $\mu = \$31,000$ and $\sigma = \$1000$. Company B offers starting salaries with $\mu = \$31,000$ and $\sigma = \$5000$. From which company are you more likely to get an offer of \$33,000 or more? Explain your reasoning.

Comparing Two Data Sets In Exercises 7 and 8, you are asked to compare two data sets and interpret the results.

7. Sample annual salaries (in thousands of dollars) for accountants in Dallas and New York City are listed.

Dallas: 41.6 50.0 49.5 38.7 39.9 45.8 44.7 47.8 40.5

New York City: 45.6 41.5 57.6 55.1 59.3 59.0 50.6 47.2 42.3

(a) Find the mean, median, range, variance, and standard deviation of each data set.

(b) Interpret the results in the context of the real-life setting.

8. Sample SAT scores for eight males and eight females are listed.

Male SAT scores: 1520 1750 2120 1380 1982 1645 1033 1714

Female SAT scores: 1785 1507 1497 1952 2210 1871 1263 1588

(a) Find the mean, median, range, variance, and standard deviation of each data set.

(b) Interpret the results in the context of the real-life setting.

Using the Empirical Rule

9. The mean value of land and buildings per acre from a sample of farms is \$1500, with a standard deviation of \$200. Estimate the percent of farms whose land and building values per acre are between \$1300 and \$1700. Between \$1100 and \$1900. (Assume the data set has a bell-shaped distribution.)

10. Using the sample statistics from Exercise 9, do the following. (Assume the number of farms in the sample is 75.) Estimate the number of farms whose land and building values per acre are between \$1300 and \$1700. Between \$1100 and \$1900.