11. The mode of the 10 blood pressures in Exercise 6 is
(a) 147.
(b) 120.
(c) 2.

12. Between the first quartile and the third quartile lie _____ percent of the observations in a distribution.

13. Which of these is *not* in a five-number summary?
(a) Median
(b) Minimum
(c) Mean

14. The five-number summary of the 10 blood pressures in Exercise 6 is _____. (Remember to list the 5 numbers in increasing order).

15. The standard deviation of the 10 blood pressures in Exercise 6 (use your calculator) is
(a) 13.23.
(b) 13.95.
(c) 194.6.

16. You have data on the weights (measured in grams) of 5 crackers. The correct units for the standard deviation of these weights are: _____ .

17. What are all the values that a standard deviation s can possibly take?
(a) $0 \le s$
(b) $0 \le s \le 1$
(c) $-1 \le s \le 1$

18. To completely specify the shape of a normal distribution, you must give its mean and its _____ .

19. The scale of scores on an IQ test is approximately normal with mean 100 and standard deviation 15. The organization MENSA, which calls itself "the high IQ society," requires an IQ score of 130 or higher for membership. What percent of adults would qualify for membership?
(a) 95%
(b) 5%
(c) 2.5%

20. The length of human pregnancies from conception to birth varies according to a distribution that is approximately normal with mean 266 days and standard deviation 16 days. We can expect that about _____ percent of all completed pregnancies are between 234 and 298 days.

CHAPTER 5 EXERCISES

■ Challenge ◆ Discussion

Make and Model	Vehicle Type	Transmission Type	Number of Cylinders	City mpg	Highway mpg
Mazda MX-5	Two-seater	Manual	4	22	27
Toyota Yaris	Subcompact	Automatic	4	29	35
Bentley Azure	Compact	Automatic	12	9	15
Audi S4 Avant	Small Station Wagon	Manual	8	13	20

Some exercises require use of a calculator (or software or Internet applet) that will find mean and standard deviation from keyed-in data.

1. Above is a small part of a data set that describes the fuel economy (in miles per gallon) of year 2008 model motor vehicles:
(a) What are the individuals in this data set?
(b) For each individual, what variables are given? For which of these variables would a histogram be helpful? (That is, which variables do not yield categorical data)?

5.1 Displaying Distributions: Histograms

5.2 Interpreting Histograms

◆ **2.** Figure 5.18 is a histogram of the lengths of words used in Shakespeare's plays. Because there are so many words in the plays, the vertical axis of the graph is the percent that are of each length, rather than the count. What is the overall shape of this distribution? What does this shape say about word lengths in Shakespeare? Do you expect other authors to have word-length distributions of the same general shape? Why?

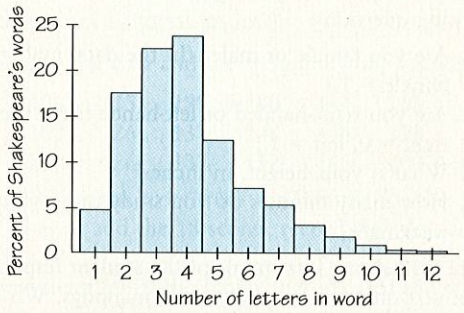

FIGURE 5.18 Histogram of the lengths of words used in Shakespeare's plays, for Exercise 2.

TABLE 5.3 Carbon Dioxide Emissions, Metric Tons per Person

Country	CO_2	Country	CO_2	Country	CO_2	Country	CO_2
Algeria	2.3	Germany	10.0	Mexico	3.7	South Africa	8.1
Argentina	3.9	Ghana	0.2	Morocco	1.0	Spain	6.8
Australia	17.0	India	0.9	Myanmar	0.2	Sudan	0.2
Bangladesh	0.2	Indonesia	1.2	Nepal	0.1	Tanzania	0.1
Brazil	1.8	Iran	3.8	Nigeria	0.3	Thailand	2.5
Canada	16.0	Iraq	3.6	Pakistan	0.7	Turkey	2.8
China	2.5	Italy	7.3	Peru	0.8	Ukraine	7.6
Colombia	1.4	Japan	9.1	Philippines	0.9	United Kingdom	9.0
Congo	0.0	Kenya	0.3	Poland	8.0	United States	19.9
Egypt	1.7	Korea, North	9.7	Romania	3.9	Uzbekistan	4.8
Ethiopia	0.0	Korea, South	8.8	Russia	10.2	Venezuela	5.1
France	6.1	Malaysia	4.6	Saudi Arabia	11.0	Vietnam	0.5

◆ **3.** Suppose that you and your friends emptied your pockets of coins and recorded the year marked on each coin. Would you expect the histogram for the distribution of dates to be skewed to the left or right? Explain your answer and make a sketch of this histogram.

4. Make a histogram of the city gas mileages of the midsized cars in Table 5.2 on page 157. Use classes with width 5 mpg. Do you prefer the histogram or the representation in Figure 5.6 of the same data? Why?

5. Burning fuels in power plants or motor vehicles emits carbon dioxide (CO_2), which contributes to global warming. Table 5.3 displays CO_2 emissions per person from countries with population at least 20 million.

(a) Why do you think we choose to measure emissions per person rather than total CO_2 emissions for each country?

(b) Display the data of Table 5.3 in a histogram. Describe the shape, center, and spread of the distribution. Which countries appear to be outliers?

■ **6.** A survey of a large college class asked the following questions:

1. Are you female or male? (In the data, male = 0, female = 1.)
2. Are you right-handed or left-handed? (In the data, right = 0, left = 1.)
3. What is your height, in inches?
4. How many minutes do you study on a typical weeknight?

Figure 5.19 shows histograms of the student responses, in scrambled order and without scale markings. Which histogram goes with each variable? Explain your reasoning.

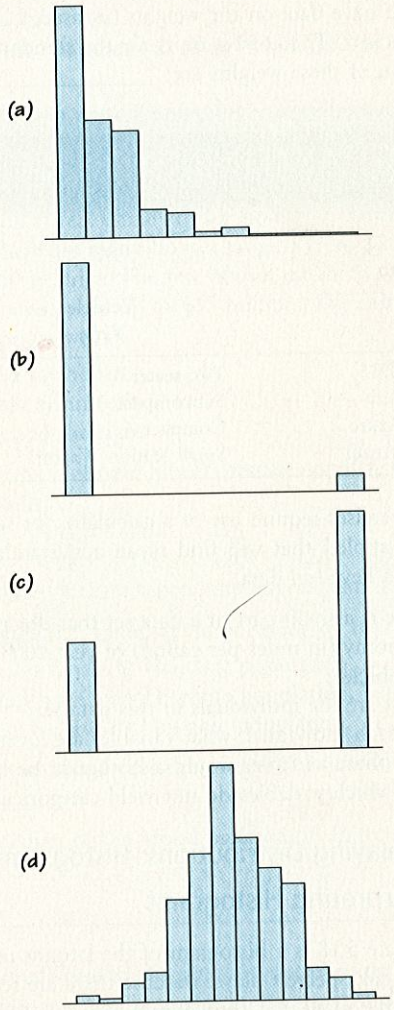

FIGURE 5.19 Match each histogram with its variable, for Exercise 6.