Chapter 2 Test Questions

1. Perhaps the oldest presentation in history of descriptive statistics was
   a. a frequency distribution
   b. graphs and tables
   c. a frequency polygon
   d. a pie chart
2. In her bar graph presentation to the queen of England, Florence Nightingale controlled for which two rival hypotheses?
   a. age and gender
   b. age and ethnicity
   c. age and war
   d. health and conditions
   e. war and gender
3. What did Dr. Snow do to show very effectively that his hypothesis was correct and thereby demonstrated the cause-effect relationship he advocated?
   a. drank from the Broad Street well
   b. removed the pump handle from the Broad Street well
   c. isolated the bacteria from the Broad Street well
   d. performed an autopsy on one of the victims before the city council
   e. all of the above
4. In Figure 2.3 (truck brands), the major problem of the presentation was
   a. cutting off the bottom 95% of the bars' heights
   b. hiding the brand names of the competing trucks

c. too many useless colors

d. meaningless three-dimensional bars

e. all of the above

5. The main difference between a bar graph and a histogram is

a. two-dimensional bars instead of three-dimensional bars

b. vertical instead of a horizontal presentation

c. bar graphs have spaces between bars and histograms don't

d. they are identical in every aspect

6. The normal curve is also called the

a. vertical frequency distribution

b. bimodal distribution

c. kurtotic curve

d. bell-shaped curve

7. A positively skewed distribution is also said to be

a. skewed normally

b. skewed left

c. skewed down

d. skewed up

e. none of the above

8. In a frequency distribution table where a majority of the frequencies are 1, the best solution would be to

a. group the data into intervals

b. use cumulative frequency as the dependent variable

c. use percentages instead of frequencies

d. use a frequency polygon

e. all of the above would be acceptable solutions

9. Which of the following is NOT true about Tukey's stem-and-leaf plots?

a. presents the data horizontally instead of vertically

b. presents all of the numbers in the set

c. can result in a single stem for some data sets

d. represents missing values with 0 or 99

10. A very pointed narrow frequency distribution graph is said to be

a. positively skewed

b. negatively skewed

c. leptokurtic

d. mesokurtic

e. platykurtic

11. A very flat frequency distribution graph is said to be

a. positively skewed

b. negatively skewed

c. leptokurtic

d. mesokurtic

e. platykurtic

12. A perfectly normal frequency distribution graph is said to be

a. positively skewed

b. negatively skewed

c. leptokurtic

d. mesokurtic

e. platykurtic

13. Which of the following was NOT a characteristic of bad graphs according to Tufte?

a. low density

b. chart junk

c. changing scales

d. labeling badly

e. the use of only black and white in a graph

14. Who used the word *statistics* in the English language as a method of determining a country's inhabitants' happiness?

a. De Moivre

b. Sinclair

c. Gauss

d. Galton

15. Currently, the best substitute for the word *errors* in statistics is

a. problems

b. klinkers

c. variations

d. mistakes

16. In a study by Micceri of 440 large-sample distributions, what percentages were significantly different from the true normal distribution?

a. 54%

b. 79%

c. 92%

d. 100%

17. How many graphs and tables did the rocket manufacturers prepare to convince NASA that the seals in the Space Shuttle *Challenger* might fail in cold weather?

a. 1

b. 2

c. 13

d. 25

18. How many graphs and tables in the previous question showed the direct comparison between the number of seal failures and temperature?

a. 0

b. 1

c. 2

d. 13

e. all 25 but NASA had already made up its mind

19. What error did Florence Nightingale commit in her bar graph presentation to the queen of England?

a. interval widths were too large

b. interval widths were too small

c. overlapping interval widths

d. too many colors

20. To display vividly the cause of some types of ulcers, a researcher

a. cured the patient with milk and a bland diet

b. injected himself with the bacteria from a patient's ulcer

c. injected a patient with ulcers with an antibiotic

d. injected a patient without ulcers with bacteria from a patient's ulcer

21. For the following set of numbers 21, 22, 25, 25, 27, 29, 30, 32, 33, 34, 35, 36, 36, 38, 39, 39, 39, 40, 42, 44, 45, 56, 57, 59, 60, 60, 60, set up a frequency distribution table with interval widths of 10 (starting at 20–29). What is the frequency of the second interval?

a. 6

b. 8

c. 11

d. 4

22. For the previous set of numbers, what is the percentage of frequency of the second interval rounded to one decimal place?

a. 20.7%

b. 40.7%

c. 40.74%

d. 40.8%

23. For the previous set of numbers, what is the cumulative percentage, including the second interval rounded to one decimal place?

a. 62.96%

b. 62.9%

c. 63.0%

d. 62.9629%

24. In a stem-and-leaf plot of the previous data, what would the second stem look like?

    a. 3 | 12345668999

    b. 3 | 0123456678999

    c. 3 | 02345668999

    d. 3032333435(1)36(2)38(1)39(3)

25. In a stem-and-leaf plot of the previous data, what would the third stem look like?

    a. 4 | 0245

    b. 40 | 1, 42 | 1, 44 | 1, 45 | 1

    c. 5 | 679

    d. 6 | 000

Chapter 2: Descriptive Statistics

1. a. a frequency distribution
2. c. age and war
3. b. removed the pump handle from the Broad Street well
4. a. cutting off the bottom 95% of the bars' heights
5. c. bar graphs have spaces between bars and histograms don't
6. d. bell-shaped curve
7. e. none of the above
8. a. group the data into intervals
9. d. represents missing values with 0 or 99
10. c. leptokurtic
11. e. platykurtic
12. d. mesokurtic
13. e. the use of only black and white in a graph
14. b. Sinclair
15. c. variations
16. d. 100%
17. c. 13

18. a. 0
19. c. overlapping interval widths
20. b. injected himself with the bacteria from a patient's ulcer
21. c. 11
22. b. 40.7%
23. c. 63.0%
24. c. 3 | 02345668999
25. a. 4 | 0245