Review Exercises

Section 1–1

For Exercises 1–8, state whether descriptive or inferential statistics has been used.

1. By 2040 at least 3.5 billion people will run short of water (World Future Society). In inferential.

2. In a sample of 100 on-the-job fatalities, 90% of the victims were men. Descriptive.

3. In a survey of 1000 adults, 34% said that they posted notes on social media websites (Source: AARP Survey).

4. In a poll of 3036 adults, 32% said that they got a flu shot at a retail clinic (Source: Harris Interactive Poll).

5. Allergy therapy makes bees go away (Source: Prevention).

6. Drinking decaffeinated coffee can raise cholesterol levels by 7% (Source: American Heart Association).

7. The average stay in a hospital for 2000 patients who had circulatory system problems was 4.7 days.

8. Experts say that mortgage rates may soon hit bottom (Source: USA TODAY). Inferential.

Section 1–2

For Exercises 9–18, classify each as nominal-level, ordinal-level, interval-level, or ratio-level measurement.


10. Rankings of golfers in a tournament.

11. Temperatures inside 10 pizza ovens.

12. Weights of selected cell phones.

13. Salaries of the coaches in the NFL.

14. Times required to complete a chess game.

15. Ratings of textbooks (poor, fair, good, excellent).

16. Number of amps delivered by battery chargers.

17. Ages of children in a day care center.

18. Categories of magazines in a physician’s office (sports, women’s, health, men’s, news).

For Exercises 19–26, classify each variable as qualitative or quantitative.


20. Time it takes to run a marathon. Quantitative.


22. Colors of automobiles in a shopping center parking lot. Qualitative.

23. Ounces of ice cream in a large milkshake. Quantitative.


For Exercises 27–34, classify each variable as discrete or continuous.

27. Number of pizzas sold by Pizza Express each day. Discrete.

28. Relative humidity levels in operating rooms at local hospitals. Continuous.

29. Number of bananas in a bunch at several local supermarkets. Discrete.

30. Lifetimes (in hours) of 15 iPod batteries. Continuous.


32. Number of students each day who make appointments with a math tutor at a local college. Discrete.


34. Ages of children in a preschool. Discrete or continuous.

For Exercises 35–38, give the boundaries of each value.

35. 36 inches.

36. 105.4 miles.

37. 72.6 tons.

38. 5.27 centimeters.
Section 1–3
For Exercises 39–44, classify each sample as random, systematic, stratified, cluster, or other.

39. In a large school district, all teachers from two buildings are interviewed to determine whether they believe the students have less homework to do now than in previous years.

40. Every seventh customer entering a shopping mall is asked to select her or his favorite store.

41. Nursing supervisors are selected using random numbers to determine annual salaries.

42. Every 100th hamburger manufactured is checked to determine its fat content.

43. Mail carriers of a large city are divided into four groups according to gender (male or female) and according to whether they walk or ride on their routes. Then 10 are selected from each group and interviewed to determine whether they have been bitten by a dog in the last year.

44. People are asked to phone in their response to a survey question.

Section 1–4
For Exercises 45–48, identify each study as being either observational or experimental.

45. Subjects were randomly assigned to two groups, and one group was given an herb and the other group a placebo. After 6 months, the numbers of respiratory tract infections each group had were compared.

46. A researcher stood at a busy intersection to see if the color of the automobile that a person drives is related to running red lights.

47. A researcher finds that people who are more hostile have higher total cholesterol levels than those who are less hostile.

48. Subjects are randomly assigned to four groups. Each group is placed on one of four special diets—a low-fat diet, a high-fish diet, a combination of low-fat diet and high-fish diet, and a regular diet. After 6 months, the blood pressures of the groups are compared to see if diet has any effect on blood pressure.

For Exercises 49–52, identify the independent and dependent variables for each study.

49. Various types of coffees are selected from local coffee shops, and the number of milligrams of caffeine per ounce is determined.

50. People who walk at least 3 miles a day are randomly selected, and their blood triglyceride levels are measured in order to determine if the number of miles that they walk has any influence on these levels.

51. In an article in the British Journal of Nutrition, two types of mice were randomly selected. One group received a thyme supplement for a specific time, while another group was not. Both groups received no supplements. The brains of the mice were then analyzed, and it was found that the brains of the group of mice that received the thyme supplements had antioxidant levels similar to those of younger mice. It was concluded that the thyme supplement increased the antioxidants in the brains of the mice.

52. It was found that laughing can reduce your aches and pains as much as taking a pain pill.

For Exercises 53–58, explain why the claims of these studies might be suspect.

53. Based on a recent telephone survey, 72% of those contacted shop online.

54. In Greenville County there are 8324 deer.

55. Nursing school graduates from Fairview University earn on average $33,456.

56. Only 5% of men surveyed said that they liked "chick flicks." How do they know what women like?

57. A recent study shows that high school dropouts spend less time on the Internet than those who graduated; therefore, the Internet raises your IQ.

58. Most shark attacks occur in ocean water that is 3 feet deep; therefore, it is safer to swim in deep water.

STATISTICS TODAY
Is Higher Education "Going Digital"? — Revisited

Researchers at the Pew Research Center used a telephone survey of 2142 graduates and an online survey of 1055 college and university presidents of two-year and four-year public and private colleges to ascertain their findings.

They found out that approximately 89% of public colleges and universities offer online classes while 60% of four-year private colleges offer them. About 23% of the graduates said that they have taken an online course. The college presidents predict that in 10 years, most of their students will have taken an online course.