Chapter 1: Statistics or Sadistics? It’s Up to You

Test Bank

# Multiple Choice

1. When humans first realized that counting was a good idea, this became a useful skill for people to have.

a. knowing the alphabet

b. asking questions

c. collecting information

d. making decisions

Ans: C

Learning Objective: 1.1: What statistics is all about.

Cognitive Domain: Knowledge

Answer Location: A 5-Minute History of Statistics

Difficulty Level: Easy

2. In early times, once numbers became part of the human language, the next step was to attach numbers to \_\_\_\_\_\_.

a. outcomes

b. letters

c. places

d. time

Ans: A

Learning Objective: 1.1: What statistics is all about.

Cognitive Domain: Knowledge

Answer Location: A 5-Minute History of Statistics

Difficulty Level: Easy

3. After the first set of data having to do with populations was collected during the 17th century, scientists needed to develop \_\_\_\_\_\_.

a. general tools to answer general questions

b. general tools to answer specific questions

c. specific tools to answer general questions

d. specific tools to answer specific questions

Ans: D

Learning Objective: What statistics is all about.

Cognitive Domain: Knowledge

Answer Location: A 5-Minute History of Statistics

Difficulty Level: Easy

4. \_\_\_\_\_\_ is one of the most popular, most powerful analytic tools available today.

a. R

b. Microsoft Word

c. Mini Tab

d. Excel

Ans: A

Learning Objective: 1.2: Why you should take statistics.

Cognitive Domain: Knowledge

Answer Location: And Why R

Difficulty Level: Easy

5. Today, statisticians in many different professional areas find themselves using \_\_\_\_\_\_ techniques to answer different questions.

a. varied

b. new

c. the same

d. experimental

Ans: C

Learning Objective: 1.2: Why you should take statistics.

Cognitive Domain: Knowledge

Answer Location: A 5-Minute History of Statistics

Difficulty Level: Easy

6. Statistics describes a set of \_\_\_\_\_\_ that are used for describing, organizing, and interpreting information.

a. statements

b. rules and exceptions

c. tools and techniques

d. numbers and letters

Ans: C

Learning Objective: 1.1: What statistics is all about.

Cognitive Domain: Knowledge

Answer Location: Statistics: What It Is (and Isn’t)

Difficulty Level: Easy

7. \_\_\_\_\_\_ statistics involve collecting, organizing, and summarizing data.

a. Experimental

b. Descriptive

c. Inferential

d. Organizational

Ans: B

Learning Objective: 1.1: What statistics is all about.

Cognitive Domain: Knowledge

Answer Location: What Are Descriptive Statistics?

Difficulty Level: Easy

8. Inferential statistics involve \_\_\_\_\_\_ the data.

a. organizing

b. balancing

c. editing

d. interpreting

Ans: D

Learning Objective: 1.1: What statistics is all about.

Cognitive Domain: Comprehension

Answer Location: Statistics: What it is (and Isn’t)

Difficulty Level: Easy

9. The type of descriptive statistic that tells you the most popular or most frequent choice from a number of choices is the \_\_\_\_\_\_.

a. median

b. mode

c. mean

d. average

Ans: B

Learning Objective: 1.1: What statistics is all about.

Cognitive Domain: Knowledge

Answer Location: What Are Descriptive Statistics?

Difficulty Level: Easy

10. The descriptive statistic that is also referred to as the *average* is the \_\_\_\_\_\_.

a. median

b. mode

c. mean

d. descriptor

Ans: C

Learning Objective: 1.1: What statistics is all about.

Cognitive Domain: Knowledge

Answer Location: What Are Descriptive Statistics?

Difficulty Level: Easy

11. \_\_\_\_\_\_ statistics are often (but not always) the next step after you have some basic understanding of data.

a. Descriptive

b. Inferential

c. Experimental

d. Observational

Ans: B

Learning Objective: 1.1: What statistics is all about.

Cognitive Domain: Knowledge

Answer Location: What Are Inferential Statistics?

Difficulty Level: Easy

12. \_\_\_\_\_\_ is to a smaller group of data as population is to a larger group of data.

a. Micro group

b. Mini group

c. Micro data

d. Sample

Ans: D

Learning Objective: 1.1: What statistics is all about.

Cognitive Domain: Comprehension

Answer Location: What Are Inferential Statistics?

Difficulty Level: Medium

13. Descriptive and inferential statistics work hand in hand, and which one you use and when depends on \_\_\_\_\_\_.

a. the question you want answered

b. the methods you choose for investigation

c. the sample you select

d. the population you choose

Ans: A

Learning Objective: 1.3: How to succeed in this course.

Cognitive Domain: Knowledge

Answer Location: In Other Words . . .

Difficulty Level: Easy

14. What term is used to describe the science of organizing and analyzing information to make the information more easily understood?

a. analysis

b. data

c. interpretation

d. statistics

Ans: D

Learning Objective: 1.1: What statistics is all about.

Cognitive Domain: Knowledge

Answer Location: Statistics: What It Is (and Isn’t)

Difficulty Level: Easy

15. Which of the following individuals used statistical methods during the 17th century to study the intelligence of his family members?

a. Charles Darwin

b. Francis Galton

c. Isaac Newton

d. Alfred Binet

Ans: B

Learning Objective: 1.1: What statistics is all about.

Cognitive Domain: Knowledge

Answer Location: A 5-Minute History of Statistics

Difficulty Level: Easy

16. Which of the following would be used to describe the type of statistical methods used to organize and describe the characteristics of a collection of data?

a. inferential statistics

b. descriptive statistics

c. sampling methods

d. population methods

Ans: B

Learning Objective: 1.1: What statistics is all about.

Cognitive Domain: Knowledge

Answer Location: What Are Descriptive Statistics?

Difficulty Level: Easy

17. When did the first collection of a set of data pertaining to populations occur?

a. 15th century

b. 17th century

c. 19th century

d. 21st century

Ans: B

Learning Objective: 1.1: What statistics is all about.

Cognitive Domain: Knowledge

Answer Location: A 5-Minute History of Statistics

Difficulty Level: Easy

18. Who popularized the use of the correlation coefficient?

a. Charles Darwin

b. Neil Salkind

c. Francis Galton

d. R. A. Fisher

Ans: C

Learning Objective: 1.1: What statistics is all about.

Cognitive Domain: Knowledge

Answer Location: A 5-Minute History of Statistics

Difficulty Level: Easy

19. What term is defined as a set of tools and techniques used for describing, organizing, and interpreting data?

a. inference

b. population

c. sample

d. statistics

Ans: D

Learning Objective: 1.1: What statistics is all about.

Cognitive Domain: Knowledge

Answer Location: Statistics: What It Is (and Isn’t)

Difficulty Level: Easy

20. If your professor tells you, “If you don’t start with reliable data, you’ll end up with unreliable results,” what does he or she mean?

a. A bird in the hand is worth two in the bush.

b. A watched pot never boils.

c. Don’t cry over spilt milk.

d. Garbage in, garbage out.

Ans: D

Learning Objective: 1.3: How to succeed in this course.

Cognitive Domain: Comprehension

Answer Location: A 5-Minute History of Statistics

Difficulty Level: Easy

21. What will you need to complete most statistical analyses?

a. a personal computer

b. large computer mainframe

c. a slide rule

d. a highly trained technician

Ans: A

Learning Objective: 1.3: How to succeed in this course.

Cognitive Domain: Knowledge

Answer Location: A 5-Minute History of Statistics

Difficulty Level: Easy

22. In what century was the simplest test for examining differences between two groups first advanced?

a. 17th century

b. 18th century

c. 19th century

d. 20th century

Ans: D

Learning Objective: 1.1: What statistics is all about.

Cognitive Domain: Knowledge

Answer Location: A 5-Minute History of Statistics

Difficulty Level: Easy

23. Inferential statistics is most often used for which of the following?

a. summarizing data

b. organizing data

c. interpreting data

d. collecting data

Ans: C

Learning Objective: 1.1: What statistics is all about.

Cognitive Domain: Knowledge

Answer Location: Statistics: What it is (and Isn’t)

Difficulty Level: Easy

24. Which of the following is NOT a use of descriptive statistics?

a. organizing data

b. interpreting data

c. summarizing data

d. collecting data

Ans: B

Learning Objective: 1.1: What statistics is all about.

Cognitive Domain: Knowledge

Answer Location: What Are Descriptive Statistics?

Difficulty Level: Easy

25. What type of statistics is used to organize and describe the characteristics of a collection of data?

a. inferential

b. descriptive

c. ordinal

d. nominal

Ans: B

Learning Objective: 1.1: What statistics is all about.

Cognitive Domain: Knowledge

Answer Location: What Are Descriptive Statistics?

Difficulty Level: Easy

26. What is a collection of information also called?

a. data set

b. sample statistic

c. descriptive statistic

d. population subset

Ans: A

Learning Objective: 1.1: What statistics is all about.

Cognitive Domain: Knowledge

Answer Location: What Are Descriptive Statistics?

Difficulty Level: Easy

27. When are descriptive measures most often used?

a. to describe how often something occurs

b. to determine if a sample is representative of a population

c. to predict an outcome

d. to determine the effect of an intervention

Ans: A

Learning Objective: 1.1: What statistics is all about.

Cognitive Domain: Knowledge

Answer Location: What Are Descriptive Statistics?

Difficulty Level: Easy

28. How are inferential statistics most often used?

a. to infer to the quality of data collected

b. to organize and describe data

c. to make inferences from the sample to the population

d. to plot the data

Ans: C

Learning Objective: 1.1: What statistics is all about.

Cognitive Domain: Knowledge

Answer Location: What Are Inferential Statistics?

Difficulty Level: Easy

29. What is the small subset of the population from whom you collect data called?

a. population

b. sample

c. database

d. group A

Ans: B

Learning Objective: 1.1: What statistics is all about.

Cognitive Domain: Knowledge

Answer Location: What Are Inferential Statistics?

Difficulty Level: Easy

30. What is the larger group from which a sample is drawn?

a. sample group

b. population

c. median

d. mode

Ans: B

Learning Objective: 1.1: What statistics is all about.

Cognitive Domain: Knowledge

Answer Location: What Are Inferential Statistics?

Difficulty Level: Easy

31. What type of statistics employs the use of sample data that is used to infer information about the population?

a. descriptive statistics

b. ordinal statistics

c. nominal statistics

d. inferential statistics

Ans: D

Learning Objective: 1.1: What statistics is all about.

Cognitive Domain: Knowledge

Answer Location: What Are Inferential Statistics?

Difficulty Level: Easy

32. When should inferential statistics typically be used?

a. before descriptive statistics

b. after descriptive statistics

c. at the same time as descriptive statistics

d. never with descriptive statistics

Ans: B

Learning Objective: 1.1: What statistics is all about.

Cognitive Domain: Knowledge

Answer Location: What Are Inferential Statistics?

Difficulty Level: Easy

33. The average age of everyone in the class is an example of what type of statistics?

a. inferential

b. mode

c. median

d. descriptive

Ans: D

Learning Objective: 1.1: What statistics is all about.

Cognitive Domain: Comprehension

Answer Location: What Are Descriptive Statistics?

Difficulty Level: Easy

34. A common goal in statistics is to \_\_\_\_\_\_.

a. generalize results from a sample to a population

b. generalize results from a population to a sample

c. generalize results from a population to a second population

d. generalize results from a sample to a second sample

Ans: A

Learning Objective: 1.1: What statistics is all about.

Cognitive Domain: Comprehension

Answer Location: What Are Inferential Statistics?

Difficulty Level: Medium

35. A knowledge of statistics helps us make decisions based on \_\_\_\_\_\_ evidence.

a. logical

b. unobserved

c. possible

d. empirical

Ans: D

Learning Objective: What Statistics is all about

Cognitive Domain: Knowledge

Answer Location: In Other Words. . .

Difficulty Level: Medium

36. Don’t skip lessons—work through the chapters in sequence because \_\_\_\_\_\_.

a. each chapter is important

b. each chapter is full of information

c. each chapter provides a foundation for the next chapter

d. each chapter is useful

Ans: C

Learning Objective: How to succeed in this course

Cognitive Domain: Comprehension

Answer Location: Ten Ways to Use This Book

Difficulty Level: Easy

37. According to the author, when you are done with the course, you may \_\_\_\_\_\_.

a. sell the book

b. use the book as a reference

c. continue doing book exercises

d. do not sell the book

Ans: B

Learning Objective: How to succeed in this course

Cognitive Domain: Comprehension

Answer Location: Ten Ways to Use This Book

Difficulty Level: Easy

38. One of the most basic ways to ensure some success in doing well in this course is to \_\_\_\_\_\_.

a. form a study group

b. take notes

c. talk to your friends

d. look up in dictionary

Ans: A

Learning Objective: How to succeed in this course

Cognitive Domain: Comprehension

Answer Location: Ten Ways to Use This Book

Difficulty Level: Easy

39. If you do not understand what you are being taught in class, \_\_\_\_\_\_.

a. ask your professors first

b. ask your friends first

c. read your book first

d. think about it first

Ans: A

Learning Objective: How to succeed in this course.

Cognitive Domain: Comprehension

Answer Location: Ten Ways to Use This Book

Difficulty Level: Easy

40. The best way to learn statistics is to \_\_\_\_\_\_.

a. ask lots of questions

b. think a lot

c. practice a lot

d. read a lot

Ans: C

Learning Objective: How to succeed in this course

Cognitive Domain: Comprehension

Answer Location: Ten Ways to Use This Book

Difficulty Level: Easy

41. R can be used for \_\_\_\_\_\_.

a. simple calculations

b. analysis of data

c. statistical examples

d. all of these

Ans: D

Learning Objective: 1.2: Why you should take statistics.

Cognitive Domain: Knowledge

Answer Location: And Why R?

Difficulty Level: Easy

42. Francis Galton was interested in \_\_\_\_\_\_.

a. reason for hairloss

b. R

c. nature of human intelligence

d. reason for hairloss and nature of human intelligence

Ans: D

Learning Objective: 1.1: What statistics is all about.

Cognitive Domain: Knowledge

Answer Location: A 5-Minute History of Statistics

Difficulty Level: Easy

43. The correlation coefficient used by Francis Galton was developed by \_\_\_\_\_\_.

a. astronomers

b. mathematicians

c. geologists

d. economists

Ans: B

Learning Objective: 1.1: What statistics is all about.

Cognitive Domain: Knowledge

Answer Location: A 5-Minute History of Statistics

Difficulty Level: Easy

44. Francis Galton popularized the use of the correlation coefficient in \_\_\_\_\_\_.

a. behavioral and social sciences

b. astronomy

c. biology

d. economics

Ans: A

Learning Objective: 1.1: What statistics is all about.

Cognitive Domain: Knowledge

Answer Location: A 5-Minute History of Statistics

Difficulty Level: Easy

45. Who developed a tool to examine the differences between the averages of two groups?

a. Charles Darwin

b. Francis Galton

c. William Sealy Gosset

d. Charles Darwin

Ans: C

Learning Objective: 1.1: What statistics is all about.

Cognitive Domain: Knowledge

Answer Location: A 5-Minute History of Statistics

Difficulty Level: Easy

46. Gosset developed \_\_\_\_\_\_.

a. the correlation coefficient

b. a test to compare differences between averages of two groups

c. R

d. none of these

Ans: B

Learning Objective: 1.1: What statistics is all about.

Cognitive Domain: Knowledge

Answer Location: A 5-Minute History of Statistics

Difficulty Level: Easy

47. What does “garbage in, garbage out” refer to?

a. unreliable and untrustworthy data returns unreliable and untrustworthy results

b. sophisticated techniques are all that are required

c. any data can be used to get reliable and trustworthy results

d. recycling

Ans: A

Learning Objective: 1.1: What statistics is all about.

Cognitive Domain: Knowledge

Answer Location: A 5-Minute History of Statistics

Difficulty Level: Easy

48. Analysis is \_\_\_\_\_\_ and analyses is \_\_\_\_\_\_.

a. singular; individual

b. additive; multiplicative

c. singular; plural

d. one; two

Ans: C

Learning Objective: 1.1: What statistics is all about.

Cognitive Domain: Knowledge

Answer Location: A 5-Minute History of Statistics

Difficulty Level: Easy

49. Statistical for People Who (Think They) Hate Statistics Using R is not about \_\_\_\_\_\_.

a. basic statistics

b. how to apply statistics in a variety of different situations

c. understanding of information

d. sophisticated analyses

Ans: D

Learning Objective: 1.1: What statistics is all about.

Cognitive Domain: Knowledge

Answer Location: Statistics: What it is (and Isn’t)

Difficulty Level: Easy

50. Data are collected, organized, summarized, and then \_\_\_\_\_\_.

a. described

b. interpreted

c. labeled

d. designated

Ans: B

Learning Objective: 1.1: What statistics is all about.

Cognitive Domain: Knowledge

Answer Location: Statistics: What it is (and Isn’t)

Difficulty Level: Easy

# True/False

1. Most of the basic statistical procedures were first developed and used in other fields and used to study human behavior much later.

Ans: T

Learning Objective: 1.1: What statistics is all about.

Cognitive Domain: Knowledge

Answer Location: A 5-Minute History of Statistics

Difficulty Level: Easy

2. The past 100 years have seen numerous examples of new ways to use old ideas.

Ans: T

Learning Objective: 1.1: What statistics is all about.

Cognitive Domain: Knowledge

Answer Location: A 5-Minute History of Statistics

Difficulty Level: Easy

3. Generally, although sometimes called different things, the same statistics are used in most disciplines.

Ans: T

Learning Objective: 1.2: Why you should take statistics.

Cognitive Domain: Knowledge

Answer Location: A 5-Minute History of Statistics

Difficulty Level: Easy

4. A population can be considered all of the occurrences with certain characteristics.

Ans: T

Learning Objective: 1.1: What statistics is all about.

Cognitive Domain: Knowledge

Answer Location: What Are Inferential Statistics?

Difficulty Level: Easy

5. All members of a sample are members of the population.

Ans: T

Learning Objective: 1.1: What statistics is all about.

Cognitive Domain: Comprehension

Answer Location: What Are Inferential Statistics?

Difficulty Level: Medium

6. Personal computers can only do 5% of statistics people need to do.

Ans: F

Learning Objective: 1.1: What statistics is all about.

Cognitive Domain: Comprehension

Answer Location: A 5-Minute History of Statistics

Difficulty Level: Medium

7. “Garbage in, garbage out” means that unreliable and untrustworthy input results in unreliable and untrustworthy results.

Ans: T

Learning Objective: 1.1: What statistics is all about.

Cognitive Domain: Comprehension

Answer Location: A 5-Minute History of Statistics

Difficulty Level: Medium

8. R is a statistical analysis tool.

Ans: T

Learning Objective: 1.1: What statistics is all about.

Cognitive Domain: Comprehension

Answer Location: And Why R?

Difficulty Level: Medium

9. With descriptive statistics, we are interested in interpreting the statistical results.

Ans: F

Learning Objective: 1.1: What statistics is all about.

Cognitive Domain: Comprehension

Answer Location: Statistics: What it is (and Isn’t)

Difficulty Level: Medium

10. The mode is another name for mean.

Ans: F

Learning Objective: 1.1: What statistics is all about.

Cognitive Domain: Comprehension

Answer Location: What Are Descriptive Statistics?

Difficulty Level: Medium

# Short Answer

1. The introduction of personal computers and their use in statistical analyses have been both good and bad. Give an example of a “good” reason and one example of a “bad” reason.

Ans: GOOD: Most statistical analyses no longer require access to a huge and expensive mainframe computer; a simple computer, typically costing less than $500, can do most of what’s needed. BAD: Less-than-adequately-educated students will take available data and think that by running those data through a sophisticated analysis they will have reliable, trustworthy, and meaningful outcomes when they do not.

Examples should reflect knowledge demonstrated in passage above.

Learning Objective: 1.2: Why you should take statistics.

Cognitive Domain: Application

Answer Location: A 5-Minute History of Statistics

Difficulty Level: Medium

2. The study of statistics can be intimidating, but it can also be rewarding. Describe at least two benefits to your life as a student by engaging in the study of statistics.

Ans: Varies

Learning Objective: 1.2: Why you should take statistics.

Cognitive Domain: Application

Answer Location: Why Statistics?

Difficulty Level: Easy

3. Define *descriptive statistics*.

Ans: Descriptive statistics are used to organize and describe the characteristics of a collection of data.

Learning Objective: 1.1: What statistics is all about.

Cognitive Domain: Knowledge

Answer Location: What Are Descriptive Statistics?

Difficulty Level: Medium

4. Define *inferential statistics*.

Ans: Inferential statistics are used to make inferences from a smaller group of data (the sample) to the larger group (population).

Learning Objective: 1.1: What statistics is all about.

Cognitive Domain: Knowledge

Answer Location: What Are Inferential Statistics?

Difficulty Level: Medium

5. What is the difference between descriptive and inferential statistics?

Ans: Descriptive statistics organize and describe data while inferential statistics are used to infer meaning about a larger population from a sample of the population.

Learning Objective: 1.1: What statistics is all about.

Cognitive Domain: Analysis

Answer Location: What Are Descriptive Statistics?; What Are Inferential Statistics?

Difficulty Level: Medium

6. Name three out of ten ways in which to use this book to succeed in this course?

Ans: Work through the chapters in sequence, form a study group, and practice, practice, practice.

Learning Objective: 1.1: What statistics is all about.

Cognitive Domain: Knowledge

Answer Location: Ten Ways to Use This Book

Difficulty Level: Easy

7. How does statistics help us understand the world around us?

Ans: Statistics does so by organizing information we have collected and then letting us make certain statements about how characteristics of those data are applicable to new settings.

Learning Objective: 1.1: What statistics is all about.

Cognitive Domain: Knowledge

Answer Location: In Other Words …

Difficulty Level: Medium

8. How does a sample relate to a population?

Ans: A sample is a smaller group of data that is a subset of the population.

Learning Objective: 1.1: What statistics is all about.

Cognitive Domain: Knowledge

Answer Location: What Are Inferential Statistics?

Difficulty Level: Easy

9. From a list of students with their selected majors, how do you identify the most popular major?

Ans: To find the most popular major, find the one that occurs most frequently.

Learning Objective: 1.1: What statistics is all about.

Cognitive Domain: Application

Answer Location: What Are Descriptive Statistics?

Difficulty Level: Easy

10. What is R and why is it useful for statistics?

Ans: R is a statistical analysis tool. It is useful for statistics because of both free and powerful in computing most any statistical test.

Learning Objective: 1.1: What statistics is all about.

Cognitive Domain: Analysis

Answer Location: And Why R?

Difficulty Level: Medium