

Business Statistics (Donnelly)

Chapter 1 Introduction to Business Statistics

1) Statistics is the mathematical science that deals with the collection, analysis, and presentation of data—data that can then be used as a basis for inference and induction.

Answer: TRUE

Diff: 1

Keywords: introduction to statistics

Objective: 1.1.1

2) Business statistics are statistics applied to the business world in an effort to improve people's decision making in fields such as marketing research, operations, finance, and advertising.

Answer: TRUE

Diff: 1

Keywords: introduction to statistics

Objective: 1.1.1

3) Information is the basic foundation for the field of statistics and can be defined as the value assigned to a specific observation or measurement.

Answer: FALSE

Diff: 1

Keywords: data

Objective: 1.2.1

4) One of the major reasons to use statistics is to transform data into information.

Answer: TRUE

Diff: 1

Keywords: introduction to statistics

Objective: 1.2.1

5) An employee records the number of customers that arrive at a retail store today. This is an example of collecting information.

Answer: FALSE

Diff: 2

Keywords: data

Objective: 1.2.1

6) Primary data is data collected by the person or organization that eventually uses the data.

Answer: TRUE

Diff: 1

Keywords: primary data

Objective: 1.2.1

1-2 Chapter 1

7) Asking customers at the shopping mall about their voting intentions in the upcoming political election is an example of secondary data.

Answer: FALSE

Diff: 1

Keywords: primary data

Objective: 1.2.1

8) Analyzing unemployment data from the Bureau of Labor Statistics is an example of using secondary data.

Answer: TRUE

Diff: 1

Keywords: secondary data

Objective: 1.2.1

9) A hotel employee asks customers who are checking out to rate their satisfaction on a scale of 1-10. This is an example of collecting primary data.

Answer: TRUE

Diff: 1

Keywords: primary data

Objective: 1.2.1

10) Analyzing snowfall amounts in New York over the past 100 years to help predict future weather patterns is an example of using primary data.

Answer: FALSE

Diff: 1

Keywords: secondary data

Objective: 1.2.1

11) Bias can occur in a survey when a question is stated in a way that encourages or leads a respondent to a particular answer.

Answer: TRUE

Diff: 1

Keywords: survey, bias

Objective: 1.2.1

12) A restaurant manager randomly selects tables at which customers have just been seated and records the amount of time it takes for the wait staff to greet these customers. This is an example of an experiment being used to collect data.

Answer: FALSE

Diff: 1

Keywords: direct observation

Objective: 1.2.1

13) A marketing research employee randomly selects adults in a shopping mall and asks them what type of car that they drive. This is an example of using direct observation to collect data.

Answer: FALSE

Diff: 1

Keywords: surveys

Objective: 1.2.1

14) A manager of an electronics store would like to investigate the impact that price has on the demand for laptop computers. Each week, the price of a Dell laptop is adjusted and the demand for each week is recorded. This is an example of an experiment being used to collect data.

Answer: TRUE

Diff: 1

Keywords: experiments

Objective: 1.2.1

15) To help ensure good questionnaire design, it is recommended that a survey is tested on a small group of respondents before releasing it to the actual participants.

Answer: TRUE

Diff: 1

Keywords: surveys

Objective: 1.2.1

16) It is recommended that personal demographic questions be placed at the beginning of the questionnaire because respondents find these questions easy to answer.

Answer: FALSE

Diff: 2

Keywords: surveys

Objective: 1.2.1

17) Interval data deals strictly with qualitative data assigned to predetermined categories.

Answer: FALSE

Diff: 1

Keywords: nominal data

Objective: 1.2.1

18) Education level is an example of nominal data.

Answer: TRUE

Diff: 1

Keywords: nominal data

Objective: 1.2.1

1-4 Chapter 1

19) Nominal data has all the features of interval data with the added benefit of having a true zero point.

Answer: FALSE

Diff: 1

Keywords: ratio data

Objective: 1.2.1

20) The interval measurement level is considered quantitative data.

Answer: TRUE

Diff: 1

Keywords: interval data

Objective: 1.2.1

21) The ratio measurement level is considered qualitative data.

Answer: FALSE

Diff: 1

Keywords: ratio data

Objective: 1.2.1

22) The number of pages in your business statistics textbook is an example of quantitative data.

Answer: TRUE

Diff: 1

Keywords: quantitative data

Objective: 1.2.1

23) Your cell phone number is an example of quantitative data.

Answer: FALSE

Diff: 2

Keywords: qualitative data

Objective: 1.2.1

24) A respondent to a survey indicates that she drives a Ford Taurus. This is an example of qualitative data.

Answer: TRUE

Diff: 1

Keywords: qualitative data

Objective: 1.2.1

25) A respondent to a survey indicates that he has lived in his current residence for three years. This is an example of qualitative data.

Answer: FALSE

Diff: 1

Keywords: qualitative data

Objective: 1.2.1

26) The mathematical operation of addition can be performed on nominal data.

Answer: FALSE

Diff: 2

Keywords: nominal data

Objective: 1.2.1

27) The mathematical operation of multiplication can be performed on interval data.

Answer: FALSE

Diff: 2

Keywords: interval data

Objective: 1.2.1

28) All mathematical operations can be performed on ratio data.

Answer: TRUE

Diff: 2

Keywords: ratio data

Objective: 1.2.1

29) The purpose of inferential statistics is to summarize or display data.

Answer: FALSE

Diff: 1

Keywords: descriptive statistics

Objective: 1.3.1

30) The purpose of inferential statistics is to make claims or conclusions about a population based on a sample.

Answer: TRUE

Diff: 1

Keywords: inferential statistics

Objective: 1.3.1

31) A limitation of descriptive statistics is that, by summarizing large quantities of data, you lose information.

Answer: TRUE

Diff: 1

Keywords: descriptive statistics

Objective: 1.3.1

32) Predicting election results by asking voters their intentions is an example of descriptive statistics.

Answer: FALSE

Diff: 1

Keywords: inferential statistics

Objective: 1.3.1

1-6 Chapter 1

33) Deciding that a process that fills bottles with soda is functioning properly by checking the weights for a sample of bottles is an example of inferential statistics.

Answer: TRUE

Diff: 1

Keywords: inferential statistics

Objective: 1.3.1

34) Calculating the average time callers wait on the phone for technical support is an example of inferential statistics.

Answer: FALSE

Diff: 1

Keywords: descriptive statistics

Objective: 1.3.1

35) Determining the proportion of customers who have credit scores greater than 700 is an example of descriptive statistics.

Answer: TRUE

Diff: 1

Keywords: descriptive statistics

Objective: 1.3.1

36) An unbiased sample is a sample that does not represent the intended population and can lead to distorted findings. Unbiased sampling can occur either intentionally or unintentionally.

Answer: FALSE

Diff: 2

Keywords: biased sample

Objective: 1.4.1

37) Statistics can be misused by making differences seem greater or lesser by adjusting the scale on graphs.

Answer: TRUE

Diff: 1

Keywords: misusing statistics

Objective: 1.4.1

38) Collecting data about the number of television viewers for the Summer Olympics is an example of using statistics in the field of _____.

A) human resources

B) advertising

C) operations

D) finance

Answer: B

Diff: 1

Keywords: uses of business statistics

Objective: 1.1.1

39) Using income data to determine the credit worthiness of a consumer who wishes to purchase a new car is an example of using statistics in the field of _____.

- A) marketing research
- B) advertising
- C) operations
- D) finance

Answer: D

Diff: 1

Keywords: uses of business statistics

Objective: 1.1.1

40) Gathering information from potential customers in an effort to determine their preferences is an example of using statistics in the field of _____.

- A) marketing research
- B) advertising
- C) operations
- D) finance

Answer: A

Diff: 1

Keywords: uses of business statistics

Objective: 1.1.1

41) Using quality control techniques to test the salt content of pretzels before they are packaged for the consumer is an example of using statistics in the field of _____.

- A) marketing research
- B) advertising
- C) operations
- D) finance

Answer: C

Diff: 1

Keywords: uses of business statistics

Objective: 1.1.1

42) _____ is (are) derived from facts for the purpose of making decisions.

- A) Data
- B) Information
- C) Statistics
- D) Samples

Answer: B

Diff: 1

Keywords: uses of business statistics

Objective: 1.1.1

1-8 Chapter 1

43) The main drawback to using secondary data is that _____.

- A) it may be expensive to obtain the data
- B) the subjects of interest need to be directly observed to collect the data
- C) the subjects of interest are paid to provide the data
- D) you have no control over how the data were collected

Answer: D

Diff: 1

Keywords: sources of data

Objective: 1.2.1

44) A method of gathering data when subjects are exposed to certain treatments and the data of interest is recorded is known as _____.

- A) direct observation
- B) focus groups
- C) experiments
- D) surveys

Answer: C

Diff: 1

Keywords: experiments

Objective: 1.2.1

45) A method of gathering data when people are asked a series of questions that can be administered by e-mail, via the Web, face-to-face or over the telephone, is known as _____.

- A) direct observation
- B) focus groups
- C) experiments
- D) surveys

Answer: D

Diff: 1

Keywords: surveys

Objective: 1.2.1

46) A method of gathering data while the subjects of interest are in their natural environment, often unaware they are being watched, is known as _____.

- A) direct observation
- B) focus groups
- C) experiments
- D) surveys

Answer: A

Diff: 1

Keywords: direct observation

Objective: 1.2.1

47) A method of gathering data when individuals are paid to discuss their attitudes towards products or services in a group setting controlled by a moderator is known as _____.

- A) direct observation
- B) focus groups
- C) experiments
- D) surveys

Answer: B

Diff: 1

Keywords: focus groups

Objective: 1.2.1

48) A telemarketer calls individuals at home over the phone and ask them the likelihood that they will purchase a timeshare property over the next 12 months. This method of gathering data is known as _____.

- A) direct observation
- B) focus groups
- C) experiments
- D) surveys

Answer: D

Diff: 1

Keywords: surveys

Objective: 1.2.1

49) A Bank of America employee records the amount of time that customers spend using the ATM machine at her branch. This method of gathering data is known as _____.

- A) direct observation
- B) focus groups
- C) experiments
- D) surveys

Answer: A

Diff: 1

Keywords: direct observation

Objective: 1.2.1

50) The manager at the local Ruby Tuesday's restaurant wanted to investigate the effect of music on the average revenue per customer. Each night for one month, fast-paced music was played. The following month, slow-paced music was played every night. The average revenue per customer for each month was compared. This method of gathering data is known as _____.

- A) direct observation
- B) focus groups
- C) experiments
- D) surveys

Answer: C

Diff: 1

Keywords: experiments

Objective: 1.2.1

1-10 Chapter 1

51) A marketing manager for a textbook publisher meets with a group of several students who are paid to discuss what they like and dislike about their textbooks. This method of gathering data is known as _____.

- A) direct observation
- B) focus groups
- C) experiments
- D) surveys

Answer: B

Diff: 1

Keywords: focus groups

Objective: 1.2.1

52) _____ data use numerical values to describe something of interest either by measuring it or counting it.

- A) Primary
- B) Secondary
- C) Quantitative
- D) Qualitative

Answer: C

Diff: 1

Keywords: quantitative data

Objective: 1.2.1

53) _____ data use descriptive terms to measure or classify something of interest.

- A) Primary
- B) Secondary
- C) Quantitative
- D) Qualitative

Answer: D

Diff: 1

Keywords: qualitative data

Objective: 1.2.1

54) Which of the following is an example of quantitative data?

- A) the zip code of your home address
- B) Apple's closing stock price today
- C) your gender
- D) your telephone number

Answer: B

Diff: 1

Keywords: qualitative data

Objective: 1.2.1

55) Which of the following is an example of qualitative data?

- A) today's high temperature
- B) the class average of your last statistics exam
- C) the amount of time that you studied for your last statistics exam
- D) your last name

Answer: D

Diff: 1

Keywords: quantitative data

Objective: 1.2.1

56) Which levels of measurement are considered quantitative data?

- A) interval and ratio
- B) nominal and interval
- C) nominal and ratio
- D) nominal and ordinal

Answer: A

Diff: 1

Keywords: quantitative data

Objective: 1.2.1

57) Which levels of measurement are considered qualitative data?

- A) interval and ratio
- B) nominal and interval
- C) ordinal and ratio
- D) nominal and ordinal

Answer: D

Diff: 1

Keywords: qualitative data

Objective: 1.2.1

58) The number of iPhones sold today at an Apple store is an example of _____ data.

- A) nominal
- B) ordinal
- C) interval
- D) ratio

Answer: D

Diff: 1

Keywords: ratio data

Objective: 1.2.1

1-12 Chapter 1

59) A respondent of a survey indicates that he is a resident in the state of Ohio. This is an example of _____ data.

- A) nominal
- B) ordinal
- C) interval
- D) ratio

Answer: A

Diff: 1

Keywords: nominal data

Objective: 1.2.1

60) The Graduate Management Admission Test (GMAT) is a standardized test used by schools to determine the aptitude of individuals who are applying for MBA programs. The range of the GMAT score is 200-800. Brian has recently taken the exam and scored 720. This is an example of _____ data.

- A) nominal
- B) ordinal
- C) interval
- D) ratio

Answer: C

Diff: 1

Keywords: interval data

Objective: 1.2.1

61) In a Major League Baseball game today, the Philadelphia Phillies scored six runs against the New York Mets. This is an example of _____ data.

- A) nominal
- B) ordinal
- C) interval
- D) ratio

Answer: D

Diff: 1

Keywords: ratio data

Objective: 1.2.1

62) A respondent of a survey indicates that she is currently in her junior year at the University of Texas. This is an example of _____ data.

- A) nominal
- B) ordinal
- C) interval
- D) ratio

Answer: B

Diff: 1

Keywords: ordinal data

Objective: 1.2.1

63) A car dealership performs a credit check on a potential customer. According to the credit bureau, the customer's credit score is 710. This is an example of _____ data.

- A) nominal
- B) ordinal
- C) interval
- D) ratio

Answer: C

Diff: 1

Keywords: interval data

Objective: 1.2.1

64) A respondent of a survey indicates that he owns the home that he currently resides. This is an example of _____ data.

- A) nominal
- B) ordinal
- C) interval
- D) ratio

Answer: A

Diff: 1

Keywords: nominal data

Objective: 1.2.1

65) A respondent of a survey is asked whether their most recent dining experience was excellent, good, fair, or poor. The person indicates that the experience was "good". This is an example of _____ data.

- A) nominal
- B) ordinal
- C) interval
- D) ratio

Answer: B

Diff: 1

Keywords: ordinal data

Objective: 1.2.1

66) A property of _____ data is that the differences between categories are not meaningful and, therefore, cannot be measured.

- A) cross-sectional
- B) ordinal
- C) interval
- D) ratio

Answer: B

Diff: 1

Keywords: ordinal data

Objective: 1.2.1

1-14 Chapter 1

67) _____ data has the benefit of a true zero point.

- A) Nominal
- B) Ordinal
- C) Interval
- D) Ratio

Answer: D

Diff: 1

Keywords: ratio data

Objective: 1.2.1

68) _____ data are values that correspond to specific measurements taken over a range of time periods.

- A) Cross-sectional
- B) Ordinal
- C) Time series
- D) Ratio

Answer: C

Diff: 1

Keywords: time series data

Objective: 1.2.1

69) _____ data are values collected from a number of subjects (firms, individual, states, regions, and so forth) during a single time period.

- A) Cross-sectional
- B) Ordinal
- C) Time series
- D) Ratio

Answer: A

Diff: 1

Keywords: cross-sectional data

Objective: 1.2.1

70) The following table shows the number of bagels sold at the Avalon Coffee and Bagel over the past seven days.

Day	Number Sold
Monday	69
Tuesday	63
Wednesday	88
Thursday	74
Friday	120
Saturday	197
Sunday	226

Which of the following data types best describe these values?

- A) cross-sectional
- B) nominal
- C) time series
- D) ordinal

Answer: C

Diff: 1

Keywords: time series data

Objective: 1.2.1

71) The following table shows the stock price for Facebook at the end of the past four quarters.

Quarter	Year	Stock Price
4	2012	\$25.91
1	2013	\$25.73
2	2013	\$24.88
3	2013	\$51.24

Which of the following data types best describe these values?

- A) cross-sectional
- B) nominal
- C) time series
- D) ordinal

Answer: C

Diff: 1

Keywords: time series data

Objective: 1.2.1

1-16 Chapter 1

72) The following table shows the market share for flat-panel television sales in the second quarter of 2013.

Company	Market Share
Samsung	26.5%
LG	16.3%
Sony	8.0%
Panasonic	5.3%
Guangdong	5.1%
Other	38.8%

Which of the following data types best describe these values?

- A) cross-sectional
- B) nominal
- C) time series
- D) ordinal

Answer: A

Diff: 1

Keywords: cross-sectional data

Objective: 1.2.1

73) The results from a survey that collected annual household income is shown in the following table.

Household Income (\$000)	Number of Households
Under \$30	67
\$30 to under \$40	111
\$40 to under \$50	125
\$50 to under \$60	21
\$60 to under \$70	38
Over \$70	40

Which of the following data types best describe these values?

- A) cross-sectional
- B) nominal
- C) time series
- D) ordinal

Answer: A

Diff: 1

Keywords: cross-sectional data

Objective: 1.2.1

74) Your business statistics class had an exam last week. The average exam score for the class is an example of _____.

- A) secondary data
- B) qualitative data
- C) descriptive statistics
- D) inferential statistics

Answer: C

Diff: 1

Keywords: descriptive statistics

Objective: 1.3.1

75) The proportion of customers that rate their latest airline experience as "excellent" is an example of _____.

- A) secondary data
- B) qualitative data
- C) descriptive statistics
- D) inferential statistics

Answer: C

Diff: 1

Keywords: descriptive statistics

Objective: 1.3.1

76) General Mills is considering offering a new type of yogurt. To gauge interest, they are performing taste tests at different locations around the country. Based on the results of these samples, they will decide whether or not to market the new yogurt. This is an example of using _____.

- A) secondary data
- B) qualitative data
- C) descriptive statistics
- D) inferential statistics

Answer: D

Diff: 1

Keywords: inferential statistics

Objective: 1.3.1

77) Bridgestone would like to estimate the average tread life of a particular brand of automobile tire. Fifty customers who have purchased this tire are sampled and asked about the tread life of their tires. This is an example of using _____.

- A) secondary data
- B) qualitative data
- C) descriptive statistics
- D) inferential statistics

Answer: D

Diff: 1

Keywords: inferential statistics

Objective: 1.3.1

1-18 Chapter 1

78) Holiday Inn would like to estimate the satisfaction level of its customers. A sample of 25 hotels were selected and the customers at these locations were asked to rate their experience on a scale of 1-10. Based on this sample data, Holiday Inn will draw a conclusion about the satisfaction level of their customers. This is an example of using _____.

- A) secondary data
- B) qualitative data
- C) descriptive statistics
- D) inferential statistics

Answer: D

Diff: 1

Keywords: inferential statistics

Objective: 1.3.1

79) According to climate data recorded since 1884, the average annual snowfall in Philadelphia is 22.3 inches. This value is an example of _____.

- A) biased data
- B) qualitative data
- C) descriptive statistics
- D) inferential statistics

Answer: C

Diff: 1

Keywords: descriptive statistics

Objective: 1.3.1

80) A _____ represents all possible subjects of interest.

- A) sample
- B) population
- C) statistic
- D) parameter

Answer: B

Diff: 1

Keywords: population

Objective: 1.3.1

81) A _____ is a portion of a population that is representative of the population from which it is selected.

- A) sample
- B) survey
- C) statistic
- D) parameter

Answer: A

Diff: 1

Keywords: sample

Objective: 1.3.1

82) Data that describe a characteristic about a population is known as a _____.

- A) sample
- B) survey
- C) statistic
- D) parameter

Answer: D

Diff: 1

Keywords: parameter

Objective: 1.3.1

83) Data that describe a characteristic about a sample is known as a _____.

- A) population
- B) survey
- C) statistic
- D) parameter

Answer: C

Diff: 1

Keywords: statistic

Objective: 1.3.1

84) A _____ sample does not represent the intended population and can lead to distorted findings.

- A) random
- B) probability
- C) biased
- D) stratified

Answer: C

Diff: 1

Keywords: biased sample

Objective: 1.4.1