

MULTIPLE-CHOICE TEST ITEMS

CHAPTER 1

INTRODUCTION

1.1 Statistics exists because

- a) variability.
- b) mathematics.
- c) complexity.
- d) commonalities.

Ans: a

1.2 Which of the following is *not* one of the reasons mentioned for taking an introductory statistics class?

- a) better understand research reports in your special area of interest
- b) plan statistical analyses for modest research projects
- c) intelligently evaluate statistical references in news publications and TV broadcasts
- d) single-handedly plan the analysis for any research project

Ans: d

1.3 The more advanced area of statistics is

- a) descriptive statistics.
- b) inferential statistics.
- c) population statistics.
- d) analytical statistics.

Ans: b

1.4 The area of statistics that *organizes and summarizes* information about a collection of actual observations is known as

- a) descriptive statistics.
- b) inferential statistics.
- c) population statistics.
- d) analytical statistics.

Ans: a

1.5 A single word that best describes *inferential* statistics is

- a) analyzing.
- b) summarizing.
- c) organizing.
- d) generalizing.

Ans: d

1.6 Indicate whether *one, both, or neither* of the following statements typifies *descriptive* statistics.

- a) It usually takes several months before a person feels "at home" in a new environment.
- b) My income last summer was about \$10,000.
- c) both a and b
- d) neither a nor b

Ans: b

1.7 Indicate whether *one, both, or neither* of the following statements typifies *descriptive* statistics.

- a) There is a tendency for elderly people to postpone their death until after their birthday.
- b) People with similar personalities are mutually attracted.
- c) both a and b

d) neither a nor b

Ans: d

1.8 Indicate whether *one, both, or neither* of the following statements typifies *inferential* statistics.

- a) Daily meditation reduces stress.
- b) The national deficit for last year exceeded 500 billion.
- c) both a and b
- d) neither a nor b

Ans: a

1.9 When conducting a survey, it is important that the sample be

- a) large.
- b) haphazard
- c) carefully selected
- d) random

Ans: d

1.10 Some form of randomization should occur in both

- a) descriptive and inferential statistics
- b) populations and samples
- c) surveys and experiments
- d) independent and dependent variables

Ans: c

1.11 Random assignment helps us to determine whether an observed difference between two groups is

- a) larger than expected just by chance.
- b) probably is real.
- c) merits further attention.
- d) all of the above.

Ans: d

1.12 A statistical analysis is based on

- a) data.
- b) words.
- c) labels.
- d) numbers.

Ans: a

1.13 *Quantitative* observations consist of

- a) words.
- b) numerical codes.
- c) numbers.
- d) all of the above

Ans: c

1.14 Indicate whether *one, both, or neither* of the following statements describes *quantitative* observations.

- a) score on this exam
- b) vocational goal
- c) both a and b
- d) neither a nor b

Ans: a

1.15 Indicate whether *one, both, or neither* of the following statements describes *qualitative* observations.

- a) place of birth
- b) political preference
- c) both a and b
- d) neither a nor b

Ans: c

1.16 Indicate whether *one, both, or neither* of the following statements describes *qualitative* observations.

- a) IQ score
- b) age
- c) both a and b
- d) neither a nor b

Ans: d

1.17 Indicate whether *one, both, or neither* of the following statements describes *ranked* observations.

- a) finish order at a car race.
- b) birth order among children in a family
- c) both a and b
- d) neither a nor b

Ans: c

1.18 In a survey of religious affiliation, numbers are assigned as follows: 1-None, 2-Christian, 3-Jewish, 4-Buddhist, 5-Other. Therefore it is appropriate to conclude that

- a) two Christians equal one Buddhist.
- b) a Jew is intermediate between a Christian and a Buddhist.
- c) five different classes of religious affiliation are being distinguished.
- d) religious affiliation can be treated as quantitative data.

Ans: c

1.19 An important *first* step in a statistical analysis requires that observations be identified as either

- a) words or numerical codes.
- b) quantitative, ranked, or qualitative.
- c) true or false.
- d) amounts or counts.

Ans: b

1.20 Data are *quantitative* if any single observation within a batch of observations represents a(n)

- a) amount or count.
- b) word or label.
- c) coding device.
- d) bit of information.

Ans: a

1.21 You are asked whether 1, 3, 2, 5, 3, 7 constitute quantitative or qualitative data. Your best reply is

- a) *quantitative* because these numbers involve an amount or count.
- b) *qualitative* because these numbers reflect arbitrary numerical codes or labels.
- c) *quantitative or qualitative* depending on the accuracy of these numbers.
- d) *quantitative or qualitative* depending on whether these numbers represent an amount or count,

or merely a numerical code.

Ans: d

1.22 The simplest level of measurement is

- a) interval/ratio.
- b) ordinal.
- c) nominal.
- d) approximately interval.

Ans: c

1.23 The most complex level of measurement is

- a) interval/ratio
- b) ordinal.
- c) nominal.
- d) approximately interval.

Ans: a

1.24 Shifts to more complex levels of measurement are accompanied by sets of observations that contain

- a) more information.
- b) less information.
- c) more errors.
- d) fewer errors.

Ans: a

1.25 If movies are rated on a scale from four stars (outstanding) to no stars (terrible), measurement is

- a) interval/ratio
- b) ordinal.
- c) nominal.
- d) approximately interval.

Ans: b

1.26 If people are classified as either literate, semi-literate, or illiterate, measurement is

- a) interval/ratio
- b) ordinal.
- c) nominal.
- d) approximately interval.

Ans: b

1.27 If college students are polled about how many academic units they are carrying during the current term, measurement is

- a) interval/ratio
- b) ordinal.
- c) nominal.
- d) approximately interval.

Ans: a

1.28 Qualitative data are associated with

- a) all levels of measurement.
- b) interval/ratio, ordinal, and nominal measurement.
- c) ordinal and nominal measurement.
- d) nominal measurement.

Ans: c

1.29 Quantitative data are associated with

- a) all levels of measurement.
- b) interval/ratio and ordinal measurement.
- c) interval/ratio
- d) interval/ratio and approximately interval measurement.

Ans: d

1.30 Ranked data are associated with

- a) all levels of measurement
- b) ordinal measurement
- c) approximately interval measurement
- d) nominal measurement.

Ans: b

1.31 The distinctive property of ordinal measurement is

- a) equal intervals.
- b) order.
- c) classification.
- d) a true zero.

Ans: b

1.32 Which level of measurement is *not* represented in the following statement? A racehorse, wearing number *three*, finishes *second*, with a time of *1.50 minutes*.

- a) nominal
- b) ordinal
- c) approximately interval
- d) interval/ratio

Ans: c

1.33 Which level of measurement is represented *twice* in the following statement? In my group dynamics class, I arrived *last* but spoke *most often* during the lengthy *three-hour* session.

- a) nominal
- b) ordinal
- c) approximately interval
- d) interval/ratio

Ans: b

1.34 Six is twice three only when these numbers emerge from a scale of measurement having

- a) classification.
- b) order.
- c) equal intervals.
- d) a true zero.

Ans: d

1.35 The attainment of interval/ratio measurement is particularly difficult when you attempt to measure

- a) physical characteristics.
- b) nonphysical characteristics.
- c) complex characteristics.
- d) simple characteristics.

Ans: b

1.36 As measures of academic achievement, grade point averages only approximate interval measurement. Nevertheless, it would be permissible to claim that a GPA of 2.00 represents

- a) an amount of academic achievement roughly midway between GPAs of 1.00 and 3.00.
- b) twice as much academic achievement as a GPA of 1.00.
- c) an amount of academic achievement midway between GPAs of 1.00 and 3.00.
- d) none of the above

Ans: a

1.37 Data that approximate interval measurement receive the same statistical treatment as

- a) nominal and ordinal data.
- b) ordinal and interval data.
- c) interval/ratio data.
- d) ordinal, interval, and interval/ratio data.

Ans: c

1.38 When data only approximate interval measurement, as often happens in the behavioral and social sciences, you should

- a) interpret numerical claims cautiously.
- b) shift to more precise measurement.
- c) question the worth of the data.
- d) develop more incisive research techniques

Ans: a

1.39 A characteristic that can assume more than one value is referred to as

- a) fickle.
- b) changeable.
- c) a constant.
- d) a variable.

Ans: d

1.40 Which one of the following quantitative variables is *not* continuous?

- a) age
- b) speed
- c) population
- d) height

Ans: c

1.41 When values are rounded off, the resulting numbers are

- a) approximate.
- b) erroneous.
- c) misleading.
- d) speculative.

Ans: a

1.42 Gaps among values of continuous variables are

- a) more apparent than real.
- b) caused by rounding off procedures.
- c) reflect our need to deal with finite numbers.
- d) all of the above.

Ans: d

1.43 To determine whether a new sleeping pill is effective, adult insomniacs receive a pill (either real or fake, according to some impartial assignment rule) and subsequently their sleeping times are

measured, in minutes, during eight-hour observation periods. In this study, sleeping time is

- a) the independent variable.
- b) the dependent variable.
- c) either the independent or the dependent variable.
- d) neither the independent nor the dependent variable.

Ans: b

1.44 To determine whether a new sleeping pill is effective, adult insomniacs receive a pill (either real or fake, according to some impartial assignment rule) and subsequently their sleeping times are measured, in minutes, during eight-hour observation periods.

This study can *best* be described as

- a) an experiment.
- b) an observational study.
- c) one involving two variables.
- d) one involving human subjects.

Ans: a

1.45 An independent variable is defined as a treatment that the investigator

- a) measures.
- b) manipulates.
- c) modifies.
- d) makes.

Ans: b

1.46 A distinctive property of an experiment is that the investigator decides on

- a) the laboratory setting.
- b) the two variables to be studied.
- c) the quantification of the dependent variable.
- d) who receives the special treatment.

Ans: d

1.47 When compared to observational studies, well-designed experiments provide conclusions that are more clear-cut about

- a) human populations.
- b) relationships.
- c) cause-effect relationships.
- d) large batches of data.

Ans: c

1.48 When variables cannot be manipulated by the investigator, relationships must be studied with

- a) observational studies
- b) patience
- c) very small numbers of subjects
- d) an abstract perspective

Ans: a

1.49 A confounding variable

- a) increases the generality of a study
- b) compromises the interpretation of a study
- c) replaces the independent variable
- d) facilitates the interpretation of a study

Ans: b

1.50 An experiment permits a decision about whether an observed difference is

- a) true or false.
- b) large or small.
- c) real or transitory.
- d) important or unimportant.
- e) Ans: c