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 *t*<u>wice</u> 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

MULTIPLE-CHOICE TEST ITEMS
CHAPTER 2
DESCRIBING DATA WITH TABLES AND GRAPHS

2.1 In a frequency distribution for *ungrouped* data,

a) class intervals are of size one.
b) observations are oversummarized.
c) duplicate observations can't occur.
d) the range of possible observations should be very large.

Ans: a

2.2 Frequency distributions can be constructed for

a) grouped data.
b) ungrouped data.
c) qualitative data.
d) all of the above

Ans: d

2.3 To organize a set of observations, such as 2, 3, 0, 5, 8, 1, 3, 1, for number of children per household, you should use a frequency distribution for *ungrouped* data because

a) the number of possible values is small.
b) observations are whole numbers.
c) observations tend to cluster together.
d) data are quantitative.

Ans: a

2.4 In a frequency distribution for grouped data, the leftmost column consists of

a) frequencies.
b) all possible values.
c) all observed values.
d) class intervals.

Ans: d

2.5 One inevitable byproduct of grouping data is the loss of

a) the identities of individual observations.
b) some data.
c) some regularities or patterns in the data.
d) all of the above

Ans: a

2.6 Identify the one *optional* guideline for a well-constructed frequency distribution.

a) All observations should be included in one, and only one, class.
b) All classes (with both upper and lower boundaries) should be equal in width.
c) All classes--even those with zero frequencies--should be listed.
d) All classes should have both boundaries.

Ans: d

2.7 Which one of the following *is not* a guideline for a well-constructed frequency distribution?

a) Select the width of the class from convenient numbers.
b) Aim for approximately ten classes.
c) The lower boundary of the bottom class should coincide with the smallest observation.
d) All classes should have both boundaries.

Ans: c

2.8 What's wrong with the following frequency distribution?

X	f
200-249	23
150-199	32
100-149	16
50- 99	7
	78

a) unequal classes
b) gaps between classes
c) exclusion of zero
d) too few classes

Ans: d

2.9 What's wrong with the following frequency distribution?

X	f
220-239	1
200-219	0
160-199	0
140-159	11

120-139	17
100-119	21
70- 99	14
60- 69	8
30- 59	7
20- 29	2
0- 19	1
	82

a) gaps between classes
b) unequal classes
c) not exactly ten classes
d) nothing is wrong

Ans: b

2.10 Too little summarization tends to occur if the frequency distribution contains
a) too many classes.
b) too few classes.
c) unequal classes.
d) open-ended classes.

Ans: a

2.11 In a well-constructed frequency distribution, the size of the gap between the boundaries of classes always equals
a) the width of the class.
b) the unit of measurement.
c) some convenient number.
d) a value of one.

Ans: b

2.12 To determine the real limits of a class interval,
a) ignore gaps between intervals.
b) simply find the difference between tabled boundaries.
c) add the tabled boundaries and divide by two.
d) locate the midpoints in gaps between tabled boundaries.

Ans: d

2.13 In the following well-constructed frequency distribution,

X	f
135-149.99	1
120-134.99	0
105-119.99	1
90-104.99	1
75- 89.99	2
60- 74.99	5
	10

the unit of measurement equals
a) 0.01
b) 1.00
c) 13.99
d) 15.00

Ans: a

2.14 (**NOTE: This question requires display of frequency distribution in 2.13.)**
The class interval width equals

a) 13.99
b) 15
c) 60
d) none of the above

Ans: b

2.15 (**NOTE: This question requires display of frequency distribution in 2.13.)**
The overall appearance or shape of this distribution is

a) balanced.
b) lopsided.
c) regular.
d) impossible to determine from the information given.

Ans: b

2.16 (**NOTE: This question requires display of frequency distribution in 2.13.)**
The relative frequency of the interval 75-89.99 equals

a) 0.10
b) 0.20
c) 0.50
d) none of the above

Ans: b

2.17 (**NOTE: This question requires display of frequency distribution in 2.13.)**
The approximate percentile rank for the interval 90-104.99 is

a) 10
b) 70
c) 80
d) none of the above

Ans: c

2.18 (**NOTE: This question requires display of frequency distribution in 2.13.)**
If this frequency distribution represents the test scores for a class of ten college students, we can infer that the test probably is

a) too easy.
b) too difficult.
c) multiple choice.
d) essay.

Ans: b

2.19 (**NOTE: This question requires display of frequency distribution in 2.13.)**
The cumulative frequency for the interval 105-119.99 equals

a) 1
b) 9
c) 10
d) none of the above

Ans: b

2.20 Among a batch of 95 observations, the smallest observation equals 300 and the largest observation equals 349. Therefore, the class interval width should equal

a) 1
b) 3
c) 5
d) 10

Ans: c

2.21 If the smallest observation equals 743 and the class interval width is to equal 50, the boundaries of the bottom class should be

a) 700-749
b) 740-789
c) 743-792
d) 750-799

Ans: a

2.22 Outliers are

a) worthless observations.
b) inaccurate observations.
c) illegal observations.
d) very extreme observations.

Ans: d

2.23 Whenever an outlier is encountered, *first* attempt to

a) verify its accuracy.
b) segregate it from any summary of data.
c) relegate it to a footnote.
d) study the special circumstances that produce it.

Ans: a

2.24 A valid outlier

a) is to be avoided at all costs.
b) might enhance your understanding.
c) occurs in almost every batch of data.
d) indicates poor data-collecting techniques.

Ans: b

2.25 Relative frequency distributions allow us to focus on

a) the part or fraction of the total frequency that occupies each class.
b) the relative density of observations among difference classes or categories within the same distribution.
c) the shapes of two or more distributions based on different total numbers of observations.
d) all of the above

Ans: d

2.26 To convert a frequency distribution into a relative frequency distribution,

a) add the frequencies of all lower intervals.
b) change proportions to percents.
c) divide the frequency for each interval by the total frequency for the entire distribution.
d) move the decimal point two places to the right.

Ans: c

2.27 Cumulative frequencies indicate

a) how many observations fall at or below a particular class.
b) how many observations fall at or above a particular class.
c) either a or b depending on your perspective.
d) neither a nor b

Ans: a

2.28 When relative standing within a distribution assumes primary importance, as with some test scores, frequencies often are converted to

a) relative frequencies.
b) cumulative frequencies.
c) cumulative relative frequencies.
d) all of the above

Ans: c

2.29 The percentile rank of an observation refers to its

a) rank in the distribution.
b) cumulative proportion in the distribution.
c) cumulative percent in the distribution.
d) cumulative frequency in the distribution.

Ans: c

2.30 For a test of math achievement, it would be preferable to attain a percentile rank of

a) 1
b) 43
c) 54
d) 76

Ans: d

2.31 An androgynous person (that is, a person without either pronounced male or female tendencies) should have a percentile rank in the vicinity of _____ on a masculinity-femininity scale.

a) 10
b) 30
c) 50
d) 70

Ans: c

2.32 The assignment of *exact* percentile ranks requires

a) excessive computations.
b) ungrouped data.
c) accurate computations.
d) a large total number of observations.

Ans: b

2.33 In the following frequency distribution,

X	f
6	1
5	2
4	3
3	0
2	0
1	3
	10

an *X* value of 1 has a percentile rank of

a) 4
b) 30
c) 40
d) 60

Ans: b

2.34 **(NOTE: This question requires display of the frequency distribution in 2.33.)** In the frequency distribution, a percentile rank of 60 is paired with an *X* value of

a) 3
b) 3.5
c) 4
d) 5

Ans: c

2.35 For the following frequency distribution,

X	f
80-89	4

70-79	2
60-69	11
50-59	3
	20

the interval 70-79 has an approximate percentile rank of
a) 20
b) 30
c) 80
d) none of the above
Ans: c

2.36 Frequency distributions for qualitative data are relatively easy to construct because
a) classes or categories are dictated by the data.
b) they usually are based on small total numbers of observations.
c) data patterns are more detectable.
d) all of the above
Ans: a

2.37 Frequency distributions for qualitative data always can be converted into
a) relative frequency distributions.
b) cumulative frequency distributions.
c) cumulative relative frequency distributions.
d) all of the above
Ans: a

2.38 It wouldn't make sense to determine _____ for the frequency distribution of ethnic groups within the state of New York.
a) cumulative frequencies
b) cumulative relative frequencies
c) percentile ranks
d) any of the above
Ans: d

2.39 Which one of the following *isn't* a frequency distribution for qualitative data?
a) type of transportation used by college students
b) length of marriages at time of divorce decrees
c) ethnic backgrounds of college students
d) political preferences of corporate executives
Ans: b

2.40 In the following frequency distribution,

LENGTH OF MARRIAGE AT DIVORCE

Length(years)	Percent	Cum Percent
30 or more	2	100
25-29	2	98
20-24	5	96
15-19	8	91
10-14	11	83
5- 9	22	72
0- 4	50	50
	100%	

SOURCE: *Marriage and Divorce: 1988.* Vital Statistics of the United States, Vol. III, 1996.

the total number of observations is
a) 100

b) 1,000
c) unknown.
d) unknown, but probably quite large, given the source.

Ans: d

2.41 **(NOTE: This question requires display of frequency distribution in 2.40.)**
This distribution isn't quite as informative as it could be because
a) only relative frequencies are used.
b) too many intervals are used.
c) percents are carried only one digit to the right of the decimal point.
d) observations create a peculiar lopsided or unbalanced pattern.

Ans: a

2.42 **(NOTE: This question requires display of frequency distribution in 2.40.)**
The distribution permits us to conclude that
a) about one-half of all divorced couples are married for fewer than 5 years.
b) a substantial majority of all divorced couples are married for fewer than 20 years.
c) a very small minority of all divorced couples are married for 30 or more years.
d) all of the above

Ans: d

2.43 **(NOTE: This question requires display of frequency distribution in 2.40.)**
If you could obtain more detailed information about only *one* class, it probably should be
a) *30 or more*, because this covers the largest number of possible values.
b) *30 or more*, because the larger values always are more informative.
c) *0-4*, because this class contains the largest relative frequency.
d) *0-4*, because the smaller values always are more informative.

Ans: c

2.44 **(NOTE: This question requires display of frequency distribution in 2.40.)**
The data pattern for this distribution best can be described as
a) balanced.
b) lopsided.
c) either balanced or lopsided, depending on your point of view.
d) undecipherable because of the absence of regular frequencies.

Ans: b

2.45 Given the following frequency distribution,

SUICIDES BY METHOD, 1992
(in hundreds)

METHOD	MALES	FEMALES
Firearms	163	24
Poison	32	22
Hanging	37	9
Other	15	6
	247	61

SOURCE: *Statistical Abstracts of the U.S.,* 1995.

the number of males who commit suicide with poison equals (BE CAREFUL!)
a) 32
b) 320
c) 3,200
d) 32,000

Ans: c

2.46 **(NOTE: This question requires display of frequency distribution in 2.45.)**

Comparison of these two distributions would be facilitated by
a) converting frequencies to relative frequencies.
b) expressing the frequencies more exactly.
c) expanding the *Other* category.
d) ignoring the *Other* category.
Ans: a
2.47**(NOTE: This question requires display of frequency distribution in 2.45.)**
Generally speaking, inspection of the above table suggests that
a) males and females are about equally likely to commit suicide.
b) females are about equally likely to use any of the four methods.
c) males are much more likely to use firearms than females.
d) males are much more likely to use poison than females.
Ans: c
2.48 Which of the following *is not* a property of histograms?
a) Units along the vertical axis reflect frequency.
b) Units along the horizontal axis reflect class intervals of frequency distributions.
c) Heights of bars reflect the frequencies for the various class intervals.
d) The intersection of the two axes defines the lower boundary of the bottom class interval.
Ans: d
2.49 Adjacent bars in histograms share common boundaries in order to
a) produce a more compact graph.
b) present the data without artificial disruptions.
c) minimize the effort involved in constructing the graph.
d) comply with a widely adopted convention.
Ans: b
2.50 When constructing a histogram for the ages of college students, it would be desirable to
a) locate age -- a type of frequency -- along the vertical axis.
b) construct only one frequency bar for all students over the age of 40.
c) break the horizontal scale (with wiggly lines) between 0 and the bottom class interval.
d) clearly show along the horizontal axis the upper and lower boundaries of every class interval.
Ans: c
2.51 A frequency polygon is
a) a type of bar graph.
b) a line graph.
c) an appropriate graph for qualitative data.
d) especially appropriate for small batches of data.
Ans: b
2.52 Frequency polygons are particularly useful when
a) data are qualitative.
b) data are ungrouped.
c) two or more frequency distributions are to be displayed on the same graph.
d) the original frequency distribution is to be portrayed with complete accuracy.
Ans: c
2.53 Histograms and frequency polygons may be viewed as the graphic counterpart of
a) frequency distributions for quantitative data.
b) bar graphs.
c) quantitative data.
d) class intervals.
Ans: a
2.54 A stem and leaf display is ideal for summarizing distributions when you want to

a) produce an idealized distribution.
b) compare quantitative and qualitative data.
c) emphasize the orderliness of data.
d) preserve the identities of the individual scores.

Ans: d

2.55 A stem and leaf display is a device for sorting data on the basis of
a) leading and trailing digits.
b) class intervals.
c) relative frequency.
d) degree of precision.

Ans: a

2.56 In a stem and leaf display for annual incomes, an annual income of $8,234 might be displayed as
a) a stem of 8 (thousands) and a leaf of 233.
b) a stem of 4 (units) and a leaf of 823.
c) a stem of 8234 and no leaf.
d) none of the above

Ans: a

2.57 An important characteristic of histograms, frequency polygons, and stem and leaf displays is
a) size.
b) total area.
c) relative area.
d) shape.

Ans: d

2.58 Frequency distributions that approximate a bell-shaped silhouette are described as
a) bimodal.
b) normal.
c) positively skewed.
d) negatively skewed.

Ans: b

2.59 If the incomes of equal numbers of skilled and unskilled wage earners appear in a single distribution, the resulting frequency distribution probably will be
a) bimodal.
b) normal.
c) positively skewed.
d) negatively skewed.

Ans: a

2.60 A frequency distribution of standardized IQ scores for equal numbers of male and female grade-school children probably will be
a) bimodal.
b) normal.
c) positively skewed.
d) negatively skewed.

Ans: b

2.61 A frequency distribution of scores on a very difficult statistics test probably will be
a) bimodal.
b) normal.
c) positively skewed.
d) negatively skewed.

Ans: c

2.62 Automobile speeds are clocked along a remote stretch of Interstate 80. If, in fact, motorists are obeying the posted 70 miles per hour speed limit, the frequency distribution of clocked speeds probably will be

a) bimodal.
b) normal.
c) positively skewed.
d) negatively skewed.

Ans: d

2.63 The term *positively skewed* implies that

a) a *minority* of observations are located in the positive direction relative to the rest of the distribution.
b) a *minority* of observations are positive and the majority of observations are negative.
c) a *majority* of observations are located in the positive direction relative to the rest of the distribution.
d) a *majority* of observations are positive and the minority of observations are negative.

Ans: a

2.64 The feature that distinguishes bar graphs from histograms is the use of

a) the vertical axis for frequency.
b) bars.
c) gaps between bars.
d) the horizontal axis for class intervals and categories.

Ans: c

2.65 Bar graphs are designed for use with

a) quantitative data.
b) qualitative data.
c) ranked data.
d) ungrouped data.

Ans: b

2.66 An unscrupulous person could exaggerate frequency differences in histograms or bar graphs by

a) omitting the lower end of the frequency scale.
b) increasing the width of taller bars.
c) making the vertical axis much taller than the width of the horizontal axis.
d) all of the above

Ans: d

2.67 When constructing graphs, it's considered good practice to make the vertical axis

a) about as tall as the horizontal axis is wide.
b) taller than the horizontal axis is wide.
c) shorter than the horizontal axis is wide.
d) none of the above

Ans: a

2.68 Although there are many different types of misleading graphs, the book emphasizes those produced by

a) falsifying data.
b) withholding data.
c) unscrupulous graphic techniques.
d) ignorance.

Ans: c

2.69 When constructing a graph, you must first decide on the type of graph. This decision depends on

a) the total number of observations.
b) whether data are quantitative or qualitative.
c) whether data are grouped or ungrouped.
d) the impression that you wish to create.

Ans: b

2.70 Wiggly lines can be used to signal scale breaks, and they can appear

a) along the horizontal axis.
b) along the vertical axis.
c) both a and b
d) neither a nor b

Ans: c

2.71 If you wish to graph the distribution of ethnic backgrounds for a population of alcoholics, use a

a) histogram.
b) frequency polygon.
c) stem and leaf display.
d) bar graph

Ans: d.

2.72 If you wish to graph the distribution of times spent dreaming during sleep (as inferred from rapid eye movements) for a sample of young adults, use

a) a histogram or bar graph.
b) a histogram or frequency polygon.
c) a bar graph or frequency polygon.
d) any of the above

Ans: b

2.73 If you wish to use a single bar graph to compare two different frequency distributions -- for instance, one for alcoholics and one for nonalcoholics--it would be essential to

a) double the frequency scale.
b) double the width of the horizontal axis.
c) use some technique, such as shading, to distinguish between the bars for the two distributions.
d)use some technique, such as the selection of axes that maximizes the differences between the two distributions.

Ans: c

2.74 For a given batch of data, equally competent people might choose

a) a histogram or frequency polygon.
b) a histogram or bar graph.
c) a frequency polygon or bar graph.
d) any of the above

Ans: a