Statistics for Psychology, 6e (Aron/Coups/Aron)
Chapter 1 Displaying the Order in a Group of Numbers Using Tables and Graphs

1) A psychologist who constructs a frequency table to summarize data collected on the amount of stress people have experienced in the last 2½ weeks is using
   A) a measure of central tendency.
   B) a descriptive statistical method.
   C) an intuitive statistical method.
   D) an inferential statistical method.
   Answer: B

2) Students who have read the first chapter of the textbook and theorize that performance on statistics exams will be related to the number of hours spent studying statistics know that to test their theory, they will need to use
   A) common sense.
   B) reasoning by analogy.
   C) inferential statistics.
   D) intuition.
   Answer: C

3) The two branches of statistical methods are
   A) theoretical and inferential.
   B) intuitive and observational.
   C) descriptive and intuitive.
   D) descriptive and inferential.
   Answer: D

4) If a psychologist studying aggressive tendencies in people develops an inventory to measure aggression, the psychologist is using scores on the inventory as a(n)
   A) abstract concept.
   B) variable.
   C) descriptive statistic.
   D) invariable construct.
   Answer: B

5) Each of several patients is rated for their degree of depression, and if a particular patient's depression is rated 8 on a 20-point scale, 8 represents that patient's
   A) frequency.
   B) variable.
   C) score.
   D) mean.
   Answer: C

6) If an intelligence test includes 12 items so that a person can answer any number of items between 0 and 12 correctly, each of these numbers between 0 and 12 is called a
   A) value.
   B) variable.
   C) rating.
   D) mean.
   Answer: A

7) If a difference between scores of 3 and 4 is the same as a difference between scores of 15 and 16, the variable being measured is
   A) equal-interval.
   B) differential.
   C) non-differential.
   D) rank-order.
   Answer: A

8) The number of problems correct on a test is an example of a
   A) continuous variable.
   B) discrete variable.
   C) log-linear variable.
   D) quadratic variable.
   Answer: B

9) The length of time a person talks in a group discussion is an example of a(n)
   A) continuous variable.
   B) categorical variable.
   C) transformed variable.
   D) extraneous variable.
   Answer: A

10) If the exact degree of difference between two scores has no meaning beyond the fact that one is higher than the other, the level of measurement is
   A) nominal.
   B) extraneous.
   C) rank-order.
   D) equal-interval.
   Answer: C

11) Another label for "rank-order" is
   A) categorical.
   B) ratio.
   C) ordinal.
   D) continuous.
   Answer: C

12) Which of the following student characteristics is an example of a nominal variable?
A) grade point average (3.2, 2.5, etc.)
B) number of friends (0, 1, etc.)
C) birth position in the family (first, second, etc.)
D) nationality (U.S., Japanese, etc.)
Answer: D

13) Which of the following student characteristics is an example of a rank-order variable?
A) grade point average (3.2, 2.5, etc.)
B) number of friends (0, 1, etc.)
C) birth position in the family (first, second, etc.)
D) nationality (U.S., Japanese, etc.)
Answer: C

14) The value of putting numbers into a frequency table is that
A) it makes the pattern of numbers clear at a glance.
B) it is easier to draw inferences from tables.
C) such tables are required by many journals.
D) such tables are always formatted in the same way.
Answer: A

15) A frequency table lists
A) the times per second variations occur in various wave bands.
B) the number of scores at each value.
C) the intensity of a variable over all the participants studied.
D) the average value of each variable.
Answer: B

16) In a frequency table, the column designated as "*X*" lists
A) the number of scores at each value.
B) the participant identification numbers.
C) the possible values of the variable.
D) all the variables studied.
Answer: C

17) Consider the scores 2, 6, 7, 1, 7, 8, 5, and 4. Which of the following would be the correct second line of a frequency table?
A) 2 1 12.5%
B) 7 2 25%
C) 6 1 6%
D) 1 1 12.5%
Answer: A

18) Consider the scores 2, 9, 7, 6, 1, 9, 1, and 2. Which of the following would be the correct bottom line of a frequency table?
A) 1 2 25%
B) 9 2 25%
C) 6 1 12.5%
D) 0 4 50%
Answer: B

19) Which of the following is most likely to be possible?
A) making a normal curve from a bimodal distribution
B) making a bimodal distribution from a normal curve
C) making an ordinary frequency table from a grouped frequency table
D) making a grouped frequency table from an ordinary frequency table
Answer: D

20) If a psychologist summarizes data for a variable in a frequency table, but finds that there are so many values for the variable that the table is too cumbersome to be useful, the next step would be to make a
A) histogram.
B) frequency polygon.
C) grouped frequency table.
D) bar chart.
Answer: C

21) If a student sees 5.0–9.9 in a table in an article in a psychology journal, the student is seeing
A) an interval.
B) a cumulative percent.
C) a value.
D) an ordinal rank.
Answer: A

22) A histogram looks most like
A) a city skyline.
B) a large wave.
C) a silhouette of mountains.
D) a pattern of iron filings.
Answer: A

23) In a histogram, the vertical dimension shows
A) the possible values the variable can have.
B) the intensity of the variable.
C) the mean score.
D) the frequency.
Answer: D

24) In a histogram, the horizontal dimension shows
A) the possible values the variable can have.
B) the intensity of the variable.
C) the mean score.
D) the frequency.
Answer: A

25) Making a histogram is easiest if one begins with
A) a list of all the scores in order.
B) a frequency table.
C) a list of all the percentages in order.
D) a normal curve table.
Answer: B

26) A difference between a histogram and a bar graph is that the bar graph
A) is based on percentages.
B) has spaces between the bars.
C) is for numeric values.
D) begins with a frequency of zero.
Answer: B

27) Psychologists use frequency tables and histograms to show
A) the relation between two variables.
B) the reasoning behind experiments.
C) the hypotheses they plan to test.
D) the way numbers they collect are distributed.
Answer: D

28) The best way to display a nominal variable is to use a
A) histogram.
B) grouped frequency table.
C) bar graph.
D) line graph.
Answer: C

29) The distribution of the scores in most psychological research studies are
A) unimodal.
B) bimodal.
C) multimodal.
D) rectangular.
Answer: A

30) If a psychologist rating empathic responses to strangers' distress on a scale of 1 to 20 finds that most participants have ratings of either 8 or 16, the distribution of ratings is
A) bimodal.
B) unimodal.
C) rectangular.
D) normal.
Answer: A

31) If a psychologist rating empathic responses to strangers' distress on a scale of 1 to 20 finds that most participants have ratings of 8, 12, or 16, the distribution of ratings is
A) rectangular.
B) unimodal.
C) multimodal.
D) normal.
Answer: C

32) If someone told you that a distribution showed a ceiling effect, you would surmise that it is
A) symmetrical.
B) positively skewed.
C) negatively skewed.
D) rectangular.
Answer: C

33) If someone told you that a distribution showed a floor effect, you would surmise that it is
A) symmetrical.
B) positively skewed.
C) negatively skewed.
D) rectangular.
Answer: B

34) A normal curve is
A) bimodal.
B) symmetrical.
C) kurtotic.
D) skewed.
Answer: B

35) Another way to describe a positively skewed distribution is to say that
A) the distribution is skewed to the left.
B) the distribution is skewed to the right.
C) more scores are piled up at the high end of the range.
D) it illustrates a ceiling effect.
Answer: B

36) Another way to describe a negatively skewed distribution is to say that
A) the distribution is skewed to the left.
B) the distribution is skewed to the right.
C) more scores are piled up at the low end of the range.
D) it illustrates a floor effect.
Answer: A

37) When a distribution is heavy-tailed, it is
A) flatter than a normal curve.
B) skewed to the right.
C) skewed to the left.
D) more peaked than a normal curve.
Answer: D

38) When a distribution is light-tailed, it is
A) flatter than a normal curve.
B) skewed to the right.
C) skewed to the left.
D) more peaked than a normal curve.
Answer: A

39) The proportions of the axes in a graphic display should usually be
A) square (1 up to 1 across).
B) rectangular wide (about 1½ across to 1 up).
C) rectangular tall (about 1½ up to 1 across).
D) rectangular long (about 1 up to the number of intervals across).
Answer: B

40) A frequency table is most likely to be included in a research article when
A) the variable involves categories.
B) there are a very small number of scores.
C) a correlation is being reported.
D) there are only two values for the variable.
Answer: A

41) If psychologists want to summarize a group of numbers collected in a research study and make them more understandable, they will use _____.
Answer: descriptive statistics

42) If psychologists want to draw statistical conclusions that go beyond the numbers actually collected in a research study, they will use _____.
Answer: inferential statistics

43) A listing that shows how many times each value of a variable occurs among a particular group of scores is called a(n) _____.
Answer: frequency table

44) If a student answers 20 of 25 multiple-choice items on a statistics test correctly, 20 is the student's _____.
Answer: score

45) If a statistics test is designed to test student knowledge of the shapes of distributions, knowledge of the shapes of distributions is a(n) _____.
Answer: variable

46) If the difference between scores of 3 and 4 has the same meaning as the difference between scores of 25 and 26 on a particular measure, the measure is said to be _____.
Answer: equal-interval

47) A variable that has specific values and cannot have values between those specific values is a(n) _____.
Answer: discrete variable

48) A variable that has an infinite number of values is _____.
Answer: continuous

49) Another name for an ordinal measurement is a(n) _____.
Answer: rank-order measurement

50) Nominal variables, but not rank-order or equal-interval variables, are examples of _____.
Answer: categorical variables, qualitative variables

51) Usually, the heading for the third column of a frequency table is _____.
Answer: percentage, %

52) The type of table created when a psychologist lists the number of employees at each level of earnings from $20,000 to $29,999 going up to $80,000 to $99,999 is a(n) _____.
Answer: grouped frequency table

53) A way to simplify a frequency table when there are a large number of possible values is to group the scores into _____.
Answer: intervals

54) A graph of frequencies in which the bars are adjacent to each other is a(n) _____.
Answer: histogram

55) In a histogram, the vertical axis displays _____.
Answer: frequencies

56) A frequency table or histogram describes a(n) _____.
Answer: frequency distribution, distribution of scores, distribution

57) If one of the bars of a histogram is higher than all the others, the distribution is _____.
Answer: unimodal

58) If each half of a distribution is a mirror image of the other, the distribution is _____.
Answer: symmetrical

59) A distribution in which the scores pile up at one end is said to be _____.
Answer: skewed

60) A distribution that is flatter or more peaked than a normal curve is said to be _____.
Answer: kurtotic

61) Since no environment can be more quiet than no noise at all, a survey of noise in various study environments found that noise scores tended to pile up at the low end, reflecting a(n) _____.
Answer: floor effect

62) A psychologist would include difficult questions on an intelligence test to reduce the number of perfect scores in order to avoid a(n) _____.
Answer: ceiling effect

63) A distribution that is flat is also referred to as _____.
Answer: light-tailed

64) A distribution that is peaked is also referred to as _____.
Answer: heavy-tailed

65) Graphs can be deceiving when the width to height proportion differs from _____.
Answer: 1.5 width to 1.0 height

66) Explain the difference between descriptive statistics and inferential statistics.

67) Explain why a grouped frequency table can sometimes be more useful than an ordinary frequency table in describing a group of numbers.

68) Make up a study that would result in a rectangular distribution.

69) Make up a study that would result in a distribution that is skewed to the right.

70) Make up a set of scores and graphically display these data in a way that is misleading. Explain what you have done.

71) An anthropologist examined the average number of children in a particular group of 84 hunter-gatherer societies. The anthropologist reported that the distribution was bimodal. Explain what this means to a person who has never had a course in statistics.

72) A developmental psychologist was interested in how long it took toddlers to pick up a particular attractive new toy. Fifty toddlers were studied, and all of them eventually picked up the toy. In the research article, she provided the following table for the approximate numbers of minutes it took.

Minutes	f	%
1	1	2
2	2	4
3	7	14
4	9	18
5	8	16
6	7	14
7	5	10
8	3	6
9	1	2
10	7	14

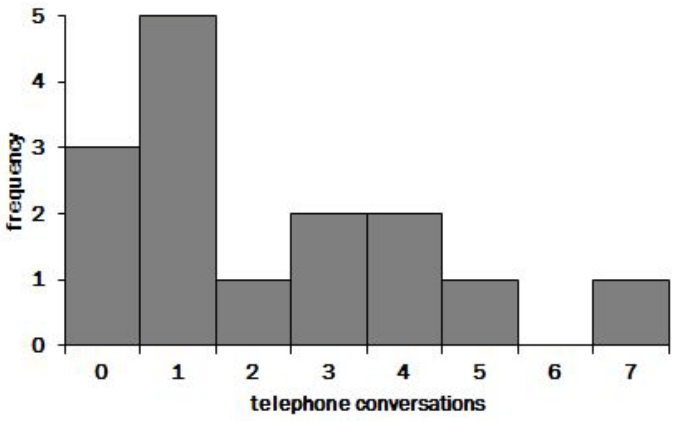
a. Using this table as an example, explain the idea of a frequency table to a person who has never had a course in statistics.
b. Explain the general meaning of the pattern of results.

73) A developmental psychologist surveyed 15 single senior citizens living in private apartments. Each participant completed a questionnaire on the number of telephone conversations he or she had in the last day. Their answers were as follows: 5, 0, 2, 1, 1, 0, 1, 0, 3, 1, 1, 4, 3, 4, and 7.
a. Make a frequency table.
b. Make a histogram based on the frequency table.
c. Describe in words the shape of the histogram.
Answer:

A)

X	f	%
0	3	18.75
1	5	31.25
2	1	6.25
3	2	12.50
4	2	12.50
5	1	6.25
6	0	0.00
7	1	6.25

B)



C) positively skewed OR skewed to the right
unimodal

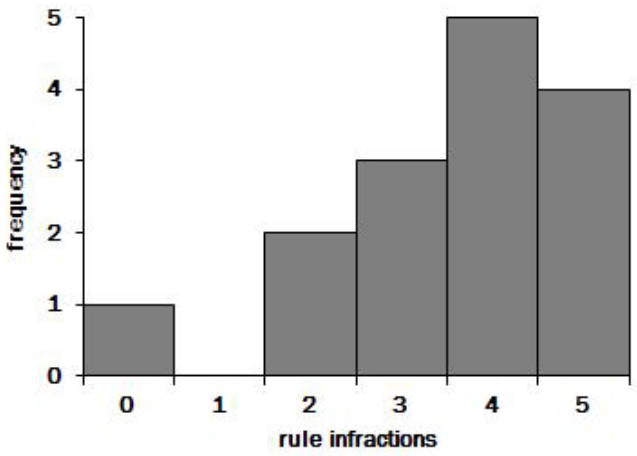
74) A prison psychologist recorded the number of rule infractions for 15 prison inmates over a six-month period to be 5, 4, 2, 4, 3, 5, 2, 0, 4, 4, 5, 5, 3, 4, and 3.
   a. Make a frequency table.
   b. Make a histogram based on the frequency table.
   c. Describe in words the shape of the histogram.
   Answer:

A)

X	*f*	%
0	1	6.67
1	0	0.00
2	2	13.33
3	3	20.00
4	5	33.33
5	4	26.67

C) negatively skewed OR skewed to the left
unimodal

B)



75) A drink vendor randomly asked college students which product they had consumed most often during the past month: 13 said water, 5 said seltzer, 12 said juice, and 20 said cola.
   a. Make a frequency table.
   b. Make a bar graph based on the frequency table.
   Answer:

A)

X	*f*	%
water	13	26.00
seltzer	5	10.00
juice	12	24.00
cola	20	40.00

B)