Test Bank for Essential Statistics for the Behavioral Sciences 1st Privitera

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1. A simple frequency distribution
   A) can be used to summarize grouped data
   B) can be used to summarize ungrouped data
   C) summarizes the frequency of scores in a given category or range
   D) all of the above

2. To determine the interval width, we divide the _____ by the number of intervals.
   A) observed range
   B) exclusive range
   C) real range
   D) all of the above

3. As a general rule, a simple frequency distribution should have between
   A) 3 and 6 intervals
   B) 5 and 10 intervals
   C) 8 and 12 intervals
   D) 5 and 20 intervals

4. The three steps for constructing a simple frequency distribution are
   A) find the observed range, find the interval width, and construct the frequency distribution
   B) find the real range, count the scores, and construct the frequency distribution
   C) find the real range, find the interval width, and construct the frequency distribution
   D) all of the above

5. The range of scores in each interval of a grouped frequency distribution is called the
   A) simple frequency
   B) interval width
   C) real range
   D) grouped data

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6. State the problem with this simple frequency distribution.

Intervals	Frequency
8-10	4
6-8	7
4-6	3
2-4	6
0-2	9

A) The interval width is too small.
B) The interval width is unequal.
C) The class intervals overlap.
D) The number of intervals is too small.

7. A researcher distributes frequencies into the following intervals: 1-10, 11-20, 21-30, 31-40, 41-50, and 51 and above. What is wrong with this frequency distribution?
A) The interval width is too small.
B) The interval width is unequal.
C) The class intervals overlap.
D) One interval is an open class.

8. A researcher distributes frequencies into the following intervals: 3-6, 7-10, 11-15, 16-18, 19-22, and 23-26. What is wrong with this frequency distribution?
A) The interval width is too small.
B) The interval width is unequal.
C) The first class interval does not begin at 0.
D) One interval is an open class.

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9. Fill in the missing values for A and B in this frequency distribution table:

Intervals	Frequency
6.0-6.6	12
5.3-5.9	7
4.6-5.2	**B**
3.9-4.5	10
A-3.8	8
	50

A) A = 3.2, B = 13
B) A = 3.1, B = 14
C) A = 3.3, B = 13
D) There is not enough information to complete this table.

10. Which of the following is NOT a rule for constructing a simple frequency distribution?
A) The number of intervals should equal the number of values measured.
B) Each interval is equidistant.
C) No class interval overlaps.
D) Values are rounded to the same degree of accuracy measured in the original data.

11. A researcher distributes frequencies into the following classes: absent, tardy, present. What type of data are distributed?
A) nominal data
B) qualitative data
C) ungrouped data
D) all of the above

12. Grouped data are to ungrouped data as
A) quantitative is to qualitative
B) qualitative is to quantitative
C) inferential is to descriptive
D) descriptive is to inferential

13. Ungrouped data can be distributed as
A) intervals
B) categories
C) upper and lower boundaries
D) all of the above

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14. Grouped data can be distributed
    A) as a range of values
    B) with upper and lower boundaries
    C) into intervals
    D) all of the above

15. A researcher summarizes a set of frequency data into five intervals. This is an example of a frequency distribution for
    A) ungrouped data
    B) grouped data
    C) inferential statistics
    D) population parameters

16. Grouped data are distributed into _____, whereas ungrouped data are distributed into _____.
    A) intervals; statistics
    B) statistics; intervals
    C) intervals; categories
    D) categories; intervals

17. The following frequency distribution is an example of

Household TVs	f(*x*)
5	4
4	23
3	20
2	29
1	30
0	8

    A) grouped data
    B) ungrouped data
    C) categorical data
    D) both B and C

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18. Which of the following requires the calculation of a real range?
    A) frequency distributions for categorical
    B) frequency distributions for ungrouped data
    C) frequency distributions for grouped data
    D) frequency distributions that do not use real data

19. When cumulating frequencies from the bottom up, the data are discussed in terms of
    A) at most
    B) less than
    C) at or below
    D) all of the above

20. When cumulating frequencies from the top down, the data are discussed in terms of
    A) greater than
    B) at or above
    C) at least
    D) all of the above

21. A researcher wants to determine how many participants will take less than 24 seconds to complete a cognitive performance task. If he constructs a frequency distribution for these data, what type of distribution would be most appropriate to answer his question?
    A) a simple frequency distribution
    B) a relative frequency distribution
    C) a cumulative frequency distribution from the bottom up
    D) a cumulative frequency distribution from the top down

22. A psychologist wants to know how many of her clients continue with therapy for *at least* 12 days. If she constructs a frequency distribution for these data, what type of distribution would be most appropriate to answer her question?
    A) a cumulative frequency distribution from the bottom up
    B) a cumulative frequency distribution from the top down
    C) a simple frequency distribution
    D) a relative frequency distribution

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23. The sum of relative frequencies for each interval is _____.
    A) 1.00
    B) 100%
    C) equal to the total number of scores in a distribution
    D) both A and B

24. A relative frequency distribution is appropriate when
    A) there are large frequency counts in each interval
    B) the data are grouped into relatively small intervals
    C) there are open classes
    D) the interval width is too large

25. A researcher reports that 12 persons in a sample of 60 reported getting between 4 and 6 hours of sleep per night. What is the relative percentage for this interval?
    A) 24%
    B) 22%
    C) 20%
    D) There is not enough information to answer this question.

26. The following is a simple frequency distribution table. Suppose we convert this table to a cumulative frequency distribution. The frequencies in each interval of the cumulative frequency distribution would be

Intervals	Frequency
17-20	5
13-16	3
9-12	2
5-8	4
1-4	6
	20

    A) 5, 8, 10, 14, 20 (top down summary)
    B) 6, 10, 12, 15, 20 (bottom up summary)
    C) both A and B, depending on how the data were summarized
    D) It is not possible to summarize the data using a cumulative frequency distribution.

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27. The following is a simple frequency distribution table. If we convert this frequency distribution to relative percentages, which of the following gives the corresponding percentages in each interval listed from the top down.

Intervals	Frequency
44-46	6
41-43	4
38-40	5
35-37	10
32-34	5
	30

A) 20%, 33%, 50%, 67%, 100%
B) 0.2, 0.13, 0.17, 0.33, 0.17
C) 20%, 13%, 17%, 33%, 17%
D) 6, 10, 15, 25, 30

28. A cumulative percentage summary that indicates the percentage of scores at or below a given value is called a
A) relative percentage
B) relative frequency
C) percentile rank
D) cumulative frequency

29. A researcher finds that 12% of participants make between 3-5 visits to a physician each year. What are the real limits for this interval?
A) 3-5
B) 2.5-5.5
C) 2.5-3.5
D) equal to the sum of the products for the previous interval

30. What is the percentile point at the 80th percentile in the following distribution?

Frequency	Percentile Rank
9-11	100%
6-8	80%
3-5	40%
0-2	20%

A) 2
B) 6
C) 7
D) 8

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31. What is the percentile point at the 90th percentile in the following distribution?

Frequency	Percentile Rank
9-11	100%
6-8	80%
3-5	40%
0-2	20%

A) 9
B) 10
C) 9.5
D) 10.5

32. A percentile is also called a:
A) score
B) range
C) distribution
D) percentile point

33. A percentile point is
A) the value of a score on a measurement scale below which a specified percentage of scores in a distribution fall
B) a summary display that distributes the sum of percentages across a series of intervals
C) an interval with no defined upper or lower boundary
D) the range of values contained in each interval of a grouped frequency distribution

34. The _____ is the percentage of scores with values that fall below a specified score in a distribution, is called the:
A) percentile rank
B) interval
C) relative frequency
D) percentile point

35. A percentile is
A) a percentile point
B) a value between -1 and +1
C) a raw score multiplied times 100
D) only used with ungrouped data

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36. What is the corresponding percentile of a percentile point
    A) the score
    B) the frequency
    C) the percentile rank
    D) always 100%

37. A student scores in the 80th percentile on an exam. What does this mean in comparison to all other students?
    A) the student scored higher than 80% of all others who took the exam
    B) the student scored worse than 80% of all others who took the exam
    C) Of all those who took the exam, only 80% of them completed it
    D) the student would score the same grade on the exam 80% of the time

38. What is the percentile point at the 50th percentile for the following distribution?

Intervals	Frequency
31-35	9
26-30	11
21-25	12
16-20	8

    A) 21
    B) 23.5
    C) 25
    D) 25.5

39. A graphical display for grouped frequency distributions with continuous data is called a
    A) histogram
    B) bar chart
    C) pie chart
    D) scatter gram

40. A _____ is plotted at the midpoint of each interval, whereas a _____ is plotted at the upper boundary of each interval.
    A) histogram; bar chart
    B) frequency polygon; histogram
    C) frequency polygon; ogive
    D) histogram; frequency polygon

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41. A researcher measures the time (in seconds) that it takes children to complete a basic reading skills task. What type of graphical display would be most appropriate for summarizing the frequency of children falling into different intervals of time?
    A) histogram
    B) bar chart
    C) scatter gram
    D) all of the above

42. A researcher measures the weight (in ounces) of newborn infants in the month of March. What type of graphical display would be most appropriate for summarizing the frequency of infants falling into different intervals of weight?
    A) histogram
    B) bar chart
    C) scatter gram
    D) all of the above

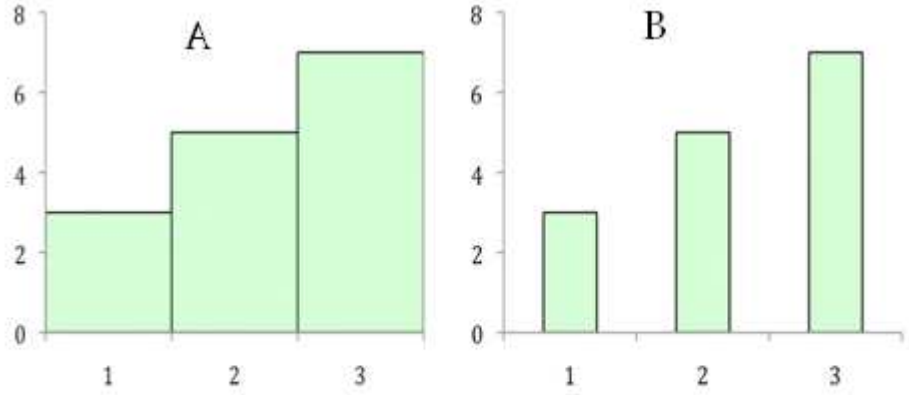
43. Which of the following is a type of graphical display used to summarize quantitative, continuous data?
    A) histogram
    B) frequency polygon
    C) ogive
    D) all of the above

44. Which characteristic of a histogram implies that it summaries continuous data?
    A) the data are plotted on the *y*-axis
    B) the vertical bars touch at the upper boundary of each interval
    C) the height of the vertical bars are not restricted
    D) the *x*-axis lists data on a nominal scale of measurement

45. Which graphical display lists percentages and not original scores
    A) histogram
    B) frequency polygon
    C) ogive
    D) all of the above

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46. State the type of graphical display for Graph A and Graph B.



A) A is a bar chart; B is a histogram.
B) B is a bar chart; A is a histogram.
C) Both graphs are bar charts.
D) Both graphs are histograms.

47. Which of the following is a type of graphical display used to summarize qualitative, discrete data?
A) bar chart
B) pie chart
C) histogram
D) both A and B

48. A researcher records the number of children at a local school from single-, divorced-, and married-parent homes. This frequency data would be best displayed as a
A) bar chart
B) frequency polygon
C) histogram
D) ogive

49. Bar charts are a lot like histograms, except
A) the bars displayed in the graph do not touch
B) the bar chart summarizes quantitative data
C) the bar chart summarizes continuous data
D) all of the above

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50. To construct a pie chart, first distribute the data as
    A) cumulative percentages
    B) relative percentages
    C) cumulative frequencies
    D) cumulative relative percentages

T F 51. Summarizing data in a table or graph can make it easier to see patterns in the data.

T F 52. Frequency distributions summarize the average scores in a set of data.

T F 53. The real range is the difference between the largest value and smallest value in a data set.

T F 54. The midpoint of a given interval is the average of the upper and lower boundaries for that interval.

T F 55. An open class is permitted when outliers exist in the data.

T F 56. Ungrouped data are always distributed in intervals.

T F 57. Grouped data are used to summarize quantitative data that are continuous or discrete.

T F 58. Frequency distributions can be used to summarize both grouped and ungrouped data.

T F 59. The data should be grouped for the following data set: 0, 0, 0, 2, 2, 1, 1, 2, 2, 2, 1, 0, 0, 0, 0, 2, 2, 1, 1, 1, 2, 1, 2, 2, 0, 0, 1, and 2.

T F 60. The data should be ungrouped for the following data set: 6, 7, 7, 7, 7, 7, 7, 8, 8, 8, 9, 9, 9, 6, 6, 6, 8, and 7. ,

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T F 61. The sum of the frequencies for a distribution is 100. This means that fewer than 100 persons were counted.

T F 62. A cumulative frequency distribution is the sum of frequencies across a series of intervals.

T F 63. A relative frequency is typically used with smaller, but not larger, data sets.

T F 64. Whether you cumulate a frequency distribution from the bottom up or the top down depends on how you want to discuss the data.

T F 65. Relative frequencies sum to the total frequency count.

T F 66. Percentages range from 0% to 100% and can never be negative.

T F 67. Twelve percent of students scored at or below a failing grade on an exam. A percentile rank distribution would be appropriate to summarize this outcome.

T F 68. A percentile rank is a cumulative percentage distribution summed from the bottom up.

T F 69. The corresponding percentile of a given percentile point is the percentile rank of that score.

T F 70. The percentile rank of a score is the percentage of scores with values that fall below a specified score in a distribution.

T F 71. A histogram is basically a bar chart where the bars do not touch.

T F 72. A histogram is used to summarize grouped data.

T F 73. A frequency polygon is a dot-and-line graph where the dot is the upper class boundary of each interval, and the line connects each dot.

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T F 74. Cumulative percent data can be summarized using an ogive.

T F 75. A frequency polygon, but not an ogive can be used to summarize cumulative percent distributions.

T F 76. In a frequency polygon, the height of each bar in the graph indicates the number of scores in each interval.

T F 77. In a bar chart, each class or category is represented by a rectangle, and each rectangle is separated (does not touch) along the *x*-axis.

T F 78. A circular graph that displays the relative percentage of a frequency distribution into sectors is called a scatter gram.

T F 79. Bar charts are used to summarize discrete and categorical data.

T F 80. To summarize relative percent data, a pie chart would be a good choice to display the data.

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Answer Key

1. D
   Ref::††Concept/Factual/LO1
2. C
   Ref::††Concept/Factual/LO1
3. D
   Ref::††Concept/Factual/LO1
4. C
   Ref::††Concept/Factual/LO1
5. B
   Ref::††Concept/Factual/LO1
6. C
   Ref::††Application/LO1
7. D
   Ref::††Application/LO1
8. B
   Ref::††Application/LO1
9. A
   Ref::††Application/LO1
10. A
    Ref::††Concept/Factual/LO1
11. D
    Ref::††Application/LO2
12. A
    Ref::††Concept/Factual/LO2
13. B
    Ref::††Concept/Factual/LO2
14. D
    Ref::††Concept/Factual/LO2
15. A
    Ref::††Concept/Factual/LO2
16. C
    Ref::††Concept/Factual/LO2
17. B
    Ref::††Concept/Factual/LO2
18. C
    Ref::††Concept/Factual/LO2
19. D
    Ref::††Concept/Factual/LO3
20. D
    Ref::††Concept/Factual/LO3
21. C
    Ref::††Application/LO3
22. B
    Ref::††Application/LO3

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23. A
    Ref::††Concept/Factual/LO3
24. A
    Ref::††Concept/Factual/LO3
25. C
    Ref::††Concept/Factual/LO3
26. C
    Ref::††Application/LO3
27. C
    Ref::††Application/LO3
28. C
    Ref::††Concept/Factual/LO4
29. B
    Ref::††Application/LO4
30. D
    Ref::††Application/LO4
31. B
    Ref::††Application/LO4
32. D
    Ref::††Concept/Factual/LO4
33. A
    Ref::††Concept/Factual/LO4
34. A
    Ref::††Concept/Factual/LO4
35. A
    Ref::††Concept/Factual/LO4
36. C
    Ref::††Concept/Factual/LO4
37. A
    Ref::††Concept/Factual/LO4
38. C
    Ref::††Application/LO4
39. A
    Ref::††Concept/Factual/LO5
40. C
    Ref::††Concept/Factual/LO5
41. A
    Ref::††ApplicationLO5
42. A
    Ref::††ApplicationLO5
43. D
    Ref::††Concept/Factual/LO5
44. B
    Ref::††Concept/Factual/LO5
45. C
    Ref::††Application/LO5

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46. B
    Ref::††Application/LO5, 6
47. D
    Ref::††Concept/Factual/LO6
48. A
    Ref::††Application/LO6
49. A
    Ref::††Concept/Factual/LO6
50. B
    Ref::††Concept/Factual/LO6
51. True
    Ref::††Concept/Factual/LO1
52. False
    Ref::††Concept/Factual/LO1
53. False
    Ref::††Concept/Factual/LO1
54. True
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55. False
    Ref::††Concept/Factual/LO1
56. False
    Ref::††Concept/Factual/LO2
57. True
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58. True
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59. False
    Ref::††Concept/Factual/LO2
60. True
    Ref::††Concept/Factual/LO2

61. False
    Ref::††Application/LO3
62. True
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63. False
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64. True
    Ref::††Concept/Factual/LO3
65. False
    Ref::††Concept/Factual/LO3
66. True
    Ref::††Concept/FactualLO3, 4
67. True

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Ref::††Application/LO4

68. True
    Ref::††Concept/Factual/LO4
69. True
    Ref::††Concept/FactualLO4
70. True
    Ref::††Application/LO4
71. False
    Ref::††Concept/Factual/LO5
72. True
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73. False
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74. True
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76. False
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77. True
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78. False
    Ref::††Concept/Factual/LO6
79. True
    Ref::††Concept/Factual/LO6
80. True
    Ref::††Concept/Factual/LO6

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