ch2

Student: _____

1. A frequency distribution groups data into classes showing the number of observations in each class.

   True False

2. A frequency distribution for qualitative data shows the number of observations in each class.

   True False

3. A frequency distribution for qualitative data has class limits.

   True False

4. A frequency distribution showing the gender of a school's students groups data into two classes.

   True False

5. In frequency distributions, classes are mutually exclusive if each individual, object, or measurement is included in only one category.

   True False

6. When a frequency distribution is exhaustive, each individual, object, or measurement from a sample or population must appear in at least one category.

   True False

7. The midpoint of a class, which is also called a class mark, is halfway between the lower and upper limits.

   True False

8. A class interval, which is the width of a class, can be determined by subtracting the lower limit of a class from the lower limit of the next higher class.

   True False

9. A suggested class interval can be determined by the formula: $\frac{\text{Highest value} - \text{Lowest value}}{\text{Number of classes}}$

   True False

10. In constructing a frequency distribution, you should try to have open-ended classes such as "Under $100" and "$1,000 and over".

    True False

11. When constructing a frequency distribution, try to include overlapping stated class limits, such as 100 up to 201, 200 up to 301, and 300 up to 401.

    True False

12. To convert a frequency distribution to a relative frequency distribution, divide each class frequency by the sum of the class frequencies.

    True False

13. To construct a histogram, the class frequencies are plotted on the vertical or *Y*-axis and either the stated limits, the true limits or the midpoints are plotted on the horizontal or *X*-axis.

    True False

14. A pie chart shows the number of observations in each class.

    True False

15. A pie chart is similar to a relative frequency distribution.

    True False

16. To construct a pie chart, relative class frequencies are used to graph the "slices" of the pie.

    True False

17. A cumulative frequency distribution is used when we want to determine how many observations lie above or below certain values.

    True False

18. In general, we should construct a frequency distribution so that there are either 4 or 24 classes.

    True False

19. The height of a bar in a histogram represents the number of observations for a class.

    True False

20. A relative frequency distribution shows the number of observations in each class.

    True False

21. A frequency polygon is a very useful graphic technique when comparing two or more distributions.

    True False

22. Monthly commissions of first-year insurance brokers are $1,270, $1,310, $1,680, $1,380, $1,410, $1,570, $1,180 and $1,420. These figures are referred to as:

    A. histogram.
    B. raw data.
    C. frequency distribution.
    D. frequency polygon.

23. A small sample of computer operators shows monthly incomes of $1,950, $1,775, $2,060, $1,840, $1,795, $1,890, $1,925 and $1,810. What are these ungrouped numbers called?

    A. Histogram
    B. Class limits
    C. Class frequencies
    D. Raw data

24. When data is collected using a quantitative, ratio variable, what is true about a frequency distribution that summarizes the data?

    A. Upper and lower class limits must be calculated.
    B. A pie chart can be used to summarize the data.
    C. Number of classes is equal to the number of variable's values.
    D. The "5 to the k rule" can be applied.

25. When data is collected using a qualitative, nominal variable, what is true about a frequency distribution that summarizes the data?

    A. Upper and lower class limits must be calculated.
    B. A pie chart can be used to summarize the data.
    C. Number of classes is equal to the number of variable's values plus 2
    D. The "5 to the k rule" can be applied.

26. When data is collected using a qualitative, nominal variable, i.e., male or female, what is true about a frequency distribution that summarizes the data?

    A. Upper and lower class limits must be calculated.
    B. Class midpoints can be computed.
    C. Number of classes corresponds to number of the variable's values.
    D. The "2 to the k rule" can be applied.

27. A student was interested in the cigarette smoking habits of college students and collected data from an unbiased random sample of students. The data is summarized in the following table:

Male: 50	Female: 75
Males who smoke: 20	Females who smoke: 25
Males who do not smoke: 30	Females who do not smoke: 50

    Why is the table NOT a frequency distribution?

    A. The number of males does not equal the sum of males that smoke and do not smoke.
    B. The classes are not mutually exclusive.
    C. There are too many classes.
    D. Class limits cannot be computed

28. When a class interval is expressed as: 100 up to 200,

    A. Observations with values of 100 are excluded from the class frequency.
    B. Observations with values of 200 are included in the class frequency.
    C. Observations with values of 200 are excluded from the class frequency.
    D. The class interval is 99.

29. For qualitative data, the relative frequency for a class is computed as class

    A. width divided by class interval.
    B. midpoint divided by the class frequency.
    C. frequency divided by the class interval.
    D. frequency divided by the total frequency.

30. For quantitative data, the relative frequency for a class is computed as class

    A. width divided by class interval.
    B. midpoint divided by the class frequency.
    C. frequency divided by the class interval.
    D. frequency divided by the total frequency.

31. A group of 100 students were surveyed about their interest in a new International Studies program. Interest was measured in terms of high, medium, or low. 30 students responded high interest; 50 students responded medium interest; 40 students responded low interest. What is the relative frequency of students with high interest?

    A. 30%
    B. 50%
    C. 40%
    D. Cannot be determined.

32. A group of 100 students were surveyed about their interest in a new Economics major. Interest was measured in terms of high, medium, or low. 30 students responded high interest; 50 students responded medium interest; 20 students responded low interest. What is the best way to illustrate the results of the study?

    A. Cumulative frequency polygon
    B. Bar chart
    C. Pie chart
    D. Frequency table

33. The monthly salaries of a sample of 100 employees were rounded to the nearest ten dollars. They ranged from a low of $1,040 to a high of $1,720. If we want to condense the data into seven classes, what is the most convenient class interval?

    A. $50
    B. $100
    C. $150
    D. $200
    E. None of the above

34. A student was studying the political party preferences of a university's student population. The survey instrument asked students to identify themselves as a democrat or a republican. This question is flawed because:

    A. Students generally don't know their political preferences.
    B. The categories are generally mutually exclusive.
    C. The categories are not exhaustive.
    D. Political preference is a continuous variable.

35. What is the following table called?

Ages	Number of Ages
20 up to 30	16
30 up to 40	25
40 up to 50	51
50 up to 60	80
60 up to 70	20
70 up to 80	8

A. Histogram
B. Frequency polygon
C. Cumulative frequency distribution
D. Frequency distribution

36. For the following distribution of heights, what are the limits for the class with the greatest frequency?

Heights	60" up to 65"	65" up to 70"	70" up to 75"
Number	10	70	20

A. 64 and up to 70
B. 65 and 69
C. 65 and up to 70
D. 69.5 and 74.5

37. In a frequency distribution, the number of observations in a class is called class

A. midpoint
B. interval
C. array
D. frequency

38. Why are unequal class intervals sometimes used in a frequency distribution?

A. To avoid a large number of empty classes
B. For the sake of variety in presenting the data
C. To make the class frequencies smaller
D. To avoid the need for midpoints

39. The age distribution of a sample of part-time employees at Lloyd's Fast Food Emporium is:

Ages	Cumulative Number
18 up to 23	6
23 up to 28	19
28 up to 33	52
33 up to 38	61
38 up to 43	65

What type of chart should be drawn to present this data?

A. Histogram
B. Simple line chart
C. Cumulative Frequency Distribution
D. Pie chart
E. Frequency polygon

40. A sample distribution of hourly earnings in Paul's Cookie Factory is:

Hourly Earnings	$6 up to $9	$9 up to $12	$12 up to $15
Numbers	16	42	10

The limits of the class with the smallest frequency are:

A. $6.00 and $9.00
B. $12.00 and up to $14.00
C. $11.75 and $14.25
D. $12.00 and up to $15.00

41. In constructing a frequency polygon, which axis are the class frequencies scaled on? _____

_____

42. A frequency distribution for nominal data requires that the categories be _____ and _____.

_____

43. For a frequency distribution of quantitative data, if every individual, object or measurement can be assigned to a class, the frequency distribution is _____.

_____

44. For a frequency distribution of qualitative data, if the observations can be assigned to only one class, the classes are _____.

_____

45. What is the number of observations in each class of a frequency distribution called? _____.

_____

46. What chart or graph is useful for illustrating relative frequencies of a nominal variable? _____.

_____

47. The midpoint of a class interval is also called a _____.

_____

48. A table showing the number of observations that have been grouped into each of several classes is called a _____.

_____

49. In a cumulative frequency distribution, what percent of the total frequencies would fall below the upper limit of the highest class? _____

_____

50. Unorganized data is referred to as _____ data.

_____

51. When classes in a frequency table are constructed so that each observation will fit into only one class, the categories are _____

_____

52. What is the suggested class interval for a frequency distribution if the data ranges from 100 to 220 with 50 observations? _____

_____

53. If the number of observations is 124, calculate the suggested number of classes using the "2to the k rule".

_____

Refer to the following distribution of commissions:

Monthly commissions	Class Frequencies
$ 600 up to $800	3
800 up to 1,000	7
1,000 up to 1,200	11
1,200 up to 1,400	22
1,400 up to 1,600	40
1,600 up to 1,800	24
1,800 up to 2,000	9
2,000 up to 2,200	4

54. What is the relative frequency for those salespersons that earn from $1,600 up to $1,800?

A. 2%
B. 2.4%
C. 20%
D. 24%
E. None of the above

55. The first plot for a cumulative frequency distribution would be:

A. $X = 0$, $Y = 600$.
B. $X = 600$, $Y = 3$.
C. $X = 3$, $Y = 600$.
D. $X = 600$, $Y = 0$.

56. What is the relative frequency of those salespersons that earn more than $1,599?

A. 25.5%
B. 27.5%
C. 29.5%
D. 30.8%

57. For the distribution above, what is the midpoint of the class with the greatest frequency?

A. 1400
B. 1500
C. 1700
D. The midpoint cannot be determined

58. What is the class interval?

A. 200
B. 300
C. 3.500
D. 400

Refer to the following ages (rounded to the nearest whole year) of employees at a large company that were grouped into a distribution with class limits:
20 up to 30
30 up to 40
40 up to 50
50 up to 60
60 up to 70

59. The class limits for the class 50 up to 60 are _____ and _____.

60. What is the midpoint for the class 40 up to 50? _____

61. What is the class interval? _____

Refer to the following weights of college men recorded to the nearest pound:
The first three class marks are 105, 115, and 125.

62. What is the class interval? _____

63. What is the lower limit for the third class? _____

64. What is the upper limit for the third class? _____

65. What are the class limits for the fourth class? _____ and _____

Refer to the following wage breakdown for a garment factory.

Hourly Wages	Number of Wage Earners
$ 4 up to $7	18
7 up to 10	36
10 up to 13	20
13 up to 16	6

66. What is the class interval for the table of wages above?

A. $2
B. $3
C. $4
D. $5

67. What is the class midpoint for the class with the greatest frequency?

A. $5.50
B. $8.50
C. $11.50
D. $14.50

68. What are the class limits for the class with the smallest number of frequencies?

A. 3.5 and 6.5
B. 4 and up to 7
C. 13 and up to 16
D. 12.5 and 15.5

Refer to the following distribution of ages:

Ages	Number
40 up to 50	10
50 up to 60	28
60 up to 70	12

69. For the distribution of ages above, what is the relative class frequency for the lowest class?

A. 50%
B. 18%
C. 20%
D. 10%

70. What is the class interval?

A. 9
B. 10
C. 10.5
D. 11

71. What is the class midpoint of the highest class?

A. 54
B. 55
C. 64
D. 65

Refer to the following information from a frequency distribution for heights of college women recorded to the nearest inch:
The first two class midpoints are 62.5" and 65.5".

72. What is the class interval?

A. 1"
B. 2"
C. 2.5"
D. 3"

73. What are the class limits for the lowest class?

A. 61 and up to 64
B. 62 and up to 64
C. 62 and 65
D. 62 and 63

74. What are the class limits for the third class?

A. 64 and up to 67
B. 67 and 69
C. 67 and up to 70
D. 66 and 68

Refer to the following distribution:

Cost of Textbooks	Number
$25 up to $35	2
35 up to 45	5
45 up to 55	7
55 up to 65	20
65 up to 75	16

75. What is the relative class frequency for the $25 up to $35 class?

A. 2%
B. 4%
C. 5%
D. 10%

76. What is the class midpoint for the $45 up to $55 class?

A. 49
B. 49.5
C. 50
D. 50.5

77. What are the class limits for class with the highest frequency?

A. 55 and 64
B. 54 and 64
C. 55 and up to 65
D. 55 and 64.5

Refer to the following frequency distribution on days absent during a calendar year by employees of a manufacturing company:

Days Absent	Number of Employees
0 up to 3	60
3 up to 6	31
6 up to 9	14
9 up to 12	6
12 up to 15	2

78. How many employees were absent between 3 up to 6 days?

    A. 31
    B. 29
    C. 14
    D. 2

79. How many employees were absent fewer than six days?

    A. 60
    B. 31
    C. 91
    D. 46

80. How many employees were absent more than six days or more?

    A. 8
    B. 4
    C. 22
    D. 31

81. How many employees were absent from 6 up to 12 days?

    A. 20
    B. 8
    C. 12
    D. 17

Refer to the following breakdown of responses to a survey of room cleanliness in a hotel.

Response	Frequency
Not satisfied	20
Satisfied	40
Highly satisfied	20

82. What is the class interval for the frequency table above?

    A. 10
    B. 20
    C. 40
    D. None of the above

83. What is the class with the greatest frequency?

    A. Not satisfied
    B. Satisfied
    C. Highly satisfied
    D. None of the above

84. What percent of the responses indicated that customers were satisfied?

    A. 20
    B. 25%
    C. 50%
    D. 100%

85. Draw a bar graph that illustrates the frequency table above.

86. Draw a bar graph that illustrates the relative frequencies.

87. Draw a pie chart that illustrates the relative frequencies.

ch2 Key

1. A frequency distribution groups data into classes showing the number of observations in each class.

TRUE

AACSB: Communication Abilities
BLOOM: Knowledge
Difficulty: Easy
Goal: 3
Lind - Chapter 02 #1

2. A frequency distribution for qualitative data shows the number of observations in each class.

TRUE

AACSB: Communication Abilities
BLOOM: Knowledge
Difficulty: Easy
Goal: 1
Lind - Chapter 02 #2

3. A frequency distribution for qualitative data has class limits.

FALSE

AACSB: Communication Abilities
BLOOM: Knowledge
Difficulty: Easy
Goal: 1
Lind - Chapter 02 #3

4. A frequency distribution showing the gender of a school's students groups data into two classes.

TRUE

AACSB: Communication Abilities
BLOOM: Comprehension
Difficulty: Easy
Goal: 1
Lind - Chapter 02 #4

5. In frequency distributions, classes are mutually exclusive if each individual, object, or measurement is included in only one category.

TRUE

AACSB: Communication Abilities
BLOOM: Analysis
Difficulty: Easy
Goal: 3
Lind - Chapter 02 #5

6. When a frequency distribution is exhaustive, each individual, object, or measurement from a sample or population must appear in at least one category.

TRUE

AACSB: Communication Abilities
BLOOM: Comprehension
Difficulty: Easy
Goal: 3
Lind - Chapter 02 #6

7. The midpoint of a class, which is also called a class mark, is halfway between the lower and upper limits.

TRUE

AACSB: Communication Abilities
BLOOM: Knowledge
Difficulty: Easy
Goal: 3
Lind - Chapter 02 #7

8. A class interval, which is the width of a class, can be determined by subtracting the lower limit of a class from the lower limit of the next higher class.

TRUE

AACSB: Communication Abilities
BLOOM: Knowledge
Difficulty: Easy
Goal: 3
Lind - Chapter 02 #8

9. A suggested class interval can be determined by the formula: $\frac{\text{Highest value} - \text{Lowest value}}{\text{Number of classes}}$

TRUE

AACSB: Analytic Skills
BLOOM: Knowledge
Difficulty: Easy
Goal: 3
Lind - Chapter 02 #9

10. In constructing a frequency distribution, you should try to have open-ended classes such as "Under $100" and "$1,000 and over".

FALSE

AACSB: Reflective Thinking Skills
BLOOM: Comprehension
Difficulty: Easy
Goal: 3
Lind - Chapter 02 #10

11. When constructing a frequency distribution, try to include overlapping stated class limits, such as 100 up to 201, 200 up to 301, and 300 up to 401.

FALSE

AACSB: Analytic Skills
BLOOM: Comprehension
Difficulty: Easy
Goal: 3
Lind - Chapter 02 #11

12. To convert a frequency distribution to a relative frequency distribution, divide each class frequency by the sum of the class frequencies.

TRUE

AACSB: Communication Abilities
BLOOM: Knowledge
Difficulty: Easy
Goal: 3
Lind - Chapter 02 #12

13. To construct a histogram, the class frequencies are plotted on the vertical or *Y*-axis and either the stated limits, the true limits or the midpoints are plotted on the horizontal or *X*-axis.

TRUE

AACSB: Communication Abilities
BLOOM: Knowledge
Difficulty: Easy
Goal: 4
Lind - Chapter 02 #13

14. A pie chart shows the number of observations in each class.

FALSE

AACSB: Communication Abilities
BLOOM: Knowledge
Difficulty: Easy
Goal: 2
Lind - Chapter 02 #14

15. A pie chart is similar to a relative frequency distribution.

TRUE

AACSB: Communication Abilities
BLOOM: Analysis
Difficulty: Medium
Goal: 2
Lind - Chapter 02 #15

16. To construct a pie chart, relative class frequencies are used to graph the "slices" of the pie.

TRUE

AACSB: Communication Abilities
BLOOM: Knowledge
Difficulty: Easy
Goal: 2
Lind - Chapter 02 #16

17. A cumulative frequency distribution is used when we want to determine how many observations lie above or below certain values.

TRUE

AACSB: Communication Abilities
BLOOM: Comprehension
Difficulty: Easy
Goal: 4
Lind - Chapter 02 #17

18. In general, we should construct a frequency distribution so that there are either 4 or 24 classes.

FALSE

AACSB: Communication Abilities
BLOOM: Comprehension
Difficulty: Easy
Goal: 3
Lind - Chapter 02 #18

19. The height of a bar in a histogram represents the number of observations for a class.

TRUE

AACSB: Communication Abilities
BLOOM: Knowledge
Difficulty: Easy
Goal: 4
Lind - Chapter 02 #19

20. A relative frequency distribution shows the number of observations in each class.

FALSE

AACSB: Communication Abilities
BLOOM: Knowledge
Difficulty: Easy
Goal: 4
Lind - Chapter 02 #20

21. A frequency polygon is a very useful graphic technique when comparing two or more distributions.

TRUE

AACSB: Communication Abilities
BLOOM: Application
Difficulty: Easy
Goal: 4
Lind - Chapter 02 #21

22. Monthly commissions of first-year insurance brokers are $1,270, $1,310, $1,680, $1,380, $1,410, $1,570, $1,180 and $1,420. These figures are referred to as:

A. histogram.
B. raw data.
C. frequency distribution.
D. frequency polygon.

AACSB: Communication Abilities
BLOOM: Knowledge
Difficulty: Easy
Goal: 3
Lind - Chapter 02 #22

23. A small sample of computer operators shows monthly incomes of $1,950, $1,775, $2,060, $1,840, $1,795, $1,890, $1,925 and $1,810. What are these ungrouped numbers called?

A. Histogram
B. Class limits
C. Class frequencies
D. Raw data

AACSB: Communication Abilities
BLOOM: Knowledge
Difficulty: Easy
Goal: 3
Lind - Chapter 02 #23

24. When data is collected using a quantitative, ratio variable, what is true about a frequency distribution that summarizes the data?

A. Upper and lower class limits must be calculated.
B. A pie chart can be used to summarize the data.
C. Number of classes is equal to the number of variable's values.
D. The "5 to the k rule" can be applied.

AACSB: Analytic Skills
BLOOM: Analysis
Difficulty: Medium
Goal: 3
Lind - Chapter 02 #24

25. When data is collected using a qualitative, nominal variable, what is true about a frequency distribution that summarizes the data?

A. Upper and lower class limits must be calculated.
B. A pie chart can be used to summarize the data.
C. Number of classes is equal to the number of variable's values plus 2
D. The "5 to the k rule" can be applied.

AACSB: Analytic Skills
BLOOM: Analysis
Difficulty: Medium
Goal: 2
Lind - Chapter 02 #25

26. When data is collected using a qualitative, nominal variable, i.e., male or female, what is true about a frequency distribution that summarizes the data?

A. Upper and lower class limits must be calculated.
B. Class midpoints can be computed.
C. Number of classes corresponds to number of the variable's values.
D. The "2 to the k rule" can be applied.

AACSB: Analytic Skills
BLOOM: Analysis
Difficulty: Medium
Goal: 1
Lind - Chapter 02 #26

27. A student was interested in the cigarette smoking habits of college students and collected data from an unbiased random sample of students. The data is summarized in the following table:

Male: 50	Female: 75
Males who smoke: 20	Females who smoke: 25
Males who do not smoke: 30	Females who do not smoke: 50

Why is the table NOT a frequency distribution?

A. The number of males does not equal the sum of males that smoke and do not smoke.
B. The classes are not mutually exclusive.
C. There are too many classes.
D. Class limits cannot be computed

AACSB: Communication Abilities
BLOOM: Comprehension
Difficulty: Medium
Goal: 3
Lind - Chapter 02 #27

28. When a class interval is expressed as: 100 up to 200,

A. Observations with values of 100 are excluded from the class frequency.
B. Observations with values of 200 are included in the class frequency.
C. Observations with values of 200 are excluded from the class frequency.
D. The class interval is 99.

AACSB: Communication Abilities
BLOOM: Comprehension
Difficulty: Easy
Goal: 3
Lind - Chapter 02 #28

29. For qualitative data, the relative frequency for a class is computed as class

A. width divided by class interval.
B. midpoint divided by the class frequency.
C. frequency divided by the class interval.
D. frequency divided by the total frequency.

AACSB: Communication Abilities
BLOOM: Knowledge
Difficulty: Easy
Goal: 1
Lind - Chapter 02 #29

30. For quantitative data, the relative frequency for a class is computed as class

A. width divided by class interval.
B. midpoint divided by the class frequency.
C. frequency divided by the class interval.
D. frequency divided by the total frequency.

AACSB: Communication Abilities
BLOOM: Knowledge
Difficulty: Easy
Goal: 3
Lind - Chapter 02 #30

31. A group of 100 students were surveyed about their interest in a new International Studies program. Interest was measured in terms of high, medium, or low. 30 students responded high interest; 50 students responded medium interest; 40 students responded low interest. What is the relative frequency of students with high interest?

A. 30%
B. 50%
C. 40%
D. Cannot be determined.

AACSB: Analytic Skills
BLOOM: Application
Difficulty: Medium
Goal: 3
Lind - Chapter 02 #31

32. A group of 100 students were surveyed about their interest in a new Economics major. Interest was measured in terms of high, medium, or low. 30 students responded high interest; 50 students responded medium interest; 20 students responded low interest. What is the best way to illustrate the results of the study?

A. Cumulative frequency polygon
B. Bar chart
C. Pie chart
D. Frequency table

AACSB: Reflective Thinking Skills
BLOOM: Analysis
Difficulty: Medium
Goal: 2
Lind - Chapter 02 #32

33. The monthly salaries of a sample of 100 employees were rounded to the nearest ten dollars. They ranged from a low of $1,040 to a high of $1,720. If we want to condense the data into seven classes, what is the most convenient class interval?

A. $50
B. $100
C. $150
D. $200
E. None of the above

AACSB: Analytic Skills
BLOOM: Comprehension
Difficulty: Medium
Goal: 3
Lind - Chapter 02 #33

34. A student was studying the political party preferences of a university's student population. The survey instrument asked students to identify themselves as a democrat or a republican. This question is flawed because:

A. Students generally don't know their political preferences.
B. The categories are generally mutually exclusive.
C. The categories are not exhaustive.
D. Political preference is a continuous variable.

AACSB: Communication Abilities
BLOOM: Analysis
Difficulty: Medium
Goal: 6
Lind - Chapter 02 #34

35. What is the following table called?

Ages	Number of Ages
20 up to 30	16
30 up to 40	25
40 up to 50	51
50 up to 60	80
60 up to 70	20
70 up to 80	8

A. Histogram
B. Frequency polygon
C. Cumulative frequency distribution
D. Frequency distribution

AACSB: Communication Abilities
BLOOM: Knowledge
Difficulty: Easy
Goal: 3
Lind - Chapter 02 #35

36. For the following distribution of heights, what are the limits for the class with the greatest frequency?

Heights	60" up to 65"	65" up to 70"	70" up to 75"
Number	10	70	20

A. 64 and up to 70
B. 65 and 69
C. 65 and up to 70
D. 69.5 and 74.5

AACSB: Communication Abilities
BLOOM: Comprehension
Difficulty: Medium
Goal: 3
Lind - Chapter 02 #36

37. In a frequency distribution, the number of observations in a class is called class

A. midpoint
B. interval
C. array
D. frequency

AACSB: Communication Abilities
BLOOM: Knowledge
Difficulty: Easy
Goal: 3
Lind - Chapter 02 #37

38. Why are unequal class intervals sometimes used in a frequency distribution?

A. To avoid a large number of empty classes
B. For the sake of variety in presenting the data
C. To make the class frequencies smaller
D. To avoid the need for midpoints

AACSB: Reflective Thinking Skills
BLOOM: Analysis
Difficulty: Easy
Goal: 3
Lind - Chapter 02 #38

39. The age distribution of a sample of part-time employees at Lloyd's Fast Food Emporium is:

Ages	Cumulative Number
18 up to 23	6
23 up to 28	19
28 up to 33	52
33 up to 38	61
38 up to 43	65

What type of chart should be drawn to present this data?

A. Histogram
B. Simple line chart
C. Cumulative Frequency Distribution
D. Pie chart
E. Frequency polygon

AACSB: Communication Abilities
BLOOM: Knowledge
Difficulty: Medium
Goal: 4
Lind - Chapter 02 #39

40. A sample distribution of hourly earnings in Paul's Cookie Factory is:

Hourly Earnings	$6 up to $9	$9 up to $12	$12 up to $15
Numbers	16	42	10

The limits of the class with the smallest frequency are:

A. $6.00 and $9.00
B. $12.00 and up to $14.00
C. $11.75 and $14.25
D. $12.00 and up to $15.00

AACSB: Communication Abilities
BLOOM: Comprehension
Difficulty: Medium
Goal: 3
Lind - Chapter 02 #40

41. In constructing a frequency polygon, which axis are the class frequencies scaled on? _____

Y or vertical axis

AACSB: Communication Abilities
BLOOM: Knowledge
Difficulty: Easy
Goal: 4
Lind - Chapter 02 #41

42. A frequency distribution for nominal data requires that the categories be _____ and _____.

mutually exclusive; exhaustive

AACSB: Communication Abilities
BLOOM: Comprehension
Difficulty: Medium
Goal: 1
Lind - Chapter 02 #42

43. For a frequency distribution of quantitative data, if every individual, object or measurement can be assigned to a class, the frequency distribution is _____.

exhaustive

AACSB: Communication Abilities
BLOOM: Knowledge
Difficulty: Medium
Goal: 3
Lind - Chapter 02 #43

44. For a frequency distribution of qualitative data, if the observations can be assigned to only one class, the classes are _____.

mutually exclusive

AACSB: Communication Abilities
BLOOM: Knowledge
Difficulty: Medium
Goal: 1
Lind - Chapter 02 #44

45. What is the number of observations in each class of a frequency distribution called? _____.

Class frequency

AACSB: Communication Abilities
BLOOM: Knowledge
Difficulty: Easy
Goal: 3
Lind - Chapter 02 #45

46. What chart or graph is useful for illustrating relative frequencies of a nominal variable? _____.

pie chart

AACSB: Communication Abilities
BLOOM: Application
Difficulty: Medium
Goal: 2
Lind - Chapter 02 #46

47. The midpoint of a class interval is also called a _____.

class mark

AACSB: Communication Abilities
BLOOM: Knowledge
Difficulty: Medium
Goal: 3
Lind - Chapter 02 #47

48. A table showing the number of observations that have been grouped into each of several classes is called a _____.

frequency distribution

AACSB: Communication Abilities
BLOOM: Knowledge
Difficulty: Easy
Goal: 3
Lind - Chapter 02 #48

49. In a cumulative frequency distribution, what percent of the total frequencies would fall below the upper limit of the highest class? _____

100%

AACSB: Communication Abilities
BLOOM: Comprehension
Difficulty: Medium
Goal: 4
Lind - Chapter 02 #49

50. Unorganized data is referred to as _____ data.

raw or ungrouped data

AACSB: Communication Abilities
BLOOM: Knowledge
Difficulty: Easy
Goal: 1
Lind - Chapter 02 #50

51. When classes in a frequency table are constructed so that each observation will fit into only one class, the categories are _____

mutually exclusive

AACSB: Communication Abilities
BLOOM: Knowledge
Difficulty: Medium
Goal: 3
Lind - Chapter 02 #51

52. What is the suggested class interval for a frequency distribution if the data ranges from 100 to 220 with 50 observations? _____

20

AACSB: Analytic Skills
BLOOM: Application
Difficulty: Medium
Goal: 3
Lind - Chapter 02 #52

53. If the number of observations is 124, calculate the suggested number of classes using the "2to the k rule".

7 intervals

AACSB: Analytic Skills
BLOOM: Comprehension
Difficulty: Medium
Goal: 3
Lind - Chapter 02 #53

Refer to the following distribution of commissions:

Monthly commissions	Class Frequencies
$ 600 up to $800	3
800 up to 1,000	7
1,000 up to 1,200	11
1,200 up to 1,400	22
1,400 up to 1,600	40
1,600 up to 1,800	24
1,800 up to 2,000	9
2,000 up to 2,200	4

Lind - Chapter 02

54. What is the relative frequency for those salespersons that earn from $1,600 up to $1,800?

A. 2%
B. 2.4%
C. 20%
D. 24%
E. None of the above

AACSB: Analytic Skills
BLOOM: Comprehension
Difficulty: Medium
Goal: 3
Lind - Chapter 02 #54

55. The first plot for a cumulative frequency distribution would be:

A. $X = 0$, $Y = 600$.
B. $X = 600$, $Y = 3$.
C. $X = 3$, $Y = 600$.
D. $X = 600$, $Y = 0$.

AACSB: Analytic Skills
BLOOM: Application
Difficulty: Medium
Goal: 4
Lind - Chapter 02 #55

56. What is the relative frequency of those salespersons that earn more than $1,599?

A. 25.5%
B. 27.5%
C. 29.5%
D. 30.8%

AACSB: Communication Abilities
BLOOM: Comprehension
Difficulty: Medium
Goal: 4
Lind - Chapter 02 #56

57. For the distribution above, what is the midpoint of the class with the greatest frequency?

A. 1400
B. 1500
C. 1700
D. The midpoint cannot be determined

AACSB: Communication Abilities
BLOOM: Comprehension
Difficulty: Medium
Goal: 3
Lind - Chapter 02 #57

58. What is the class interval?

A. 200
B. 300
C. 3.500
D. 400

AACSB: Communication Abilities
BLOOM: Comprehension
Difficulty: Medium
Goal: 3
Lind - Chapter 02 #58

Refer to the following ages (rounded to the nearest whole year) of employees at a large company that were grouped into a distribution with class limits:
20 up to 30
30 up to 40
40 up to 50
50 up to 60
60 up to 70

Lind - Chapter 02

59. The class limits for the class 50 up to 60 are _____ and _____.

50 and 59.999

AACSB: Communication Abilities
BLOOM: Comprehension
Difficulty: Medium
Goal: 3
Lind - Chapter 02 #59

60. What is the midpoint for the class 40 up to 50? _____

45

AACSB: Analytic Skills
BLOOM: Comprehension
Difficulty: Medium
Goal: 3
Lind - Chapter 02 #60

61. What is the class interval? _____

10 or ten

AACSB: Communication Abilities
BLOOM: Knowledge
Difficulty: Medium
Goal: 3
Lind - Chapter 02 #61

Refer to the following weights of college men recorded to the nearest pound:
The first three class marks are 105, 115, and 125.

Lind - Chapter 02

62. What is the class interval? _____

10

AACSB: Analytic Skills
BLOOM: Application
Difficulty: Easy
Goal: 3
Lind - Chapter 02 #62

63. What is the lower limit for the third class? _____

120

AACSB: Analytic Skills
BLOOM: Application
Difficulty: Hard
Goal: 3
Lind - Chapter 02 #63

64. What is the upper limit for the third class? _____

up to 130

AACSB: Analytic Skills
BLOOM: Application
Difficulty: Medium
Goal: 3
Lind - Chapter 02 #64

65. What are the class limits for the fourth class? _____ and _____

130 and up to 140

AACSB: Analytic Skills
BLOOM: Analysis
Difficulty: Hard
Goal: 3
Lind - Chapter 02 #65

Refer to the following wage breakdown for a garment factory.

Hourly Wages	Number of Wage Earners
$ 4 up to $7	18
7 up to 10	36
10 up to 13	20
13 up to 16	6

Lind - Chapter 02

66. What is the class interval for the table of wages above?

A. $2
B. $3
C. $4
D. $5

AACSB: Analytic Skills
BLOOM: Comprehension
Difficulty: Easy
Goal: 3
Lind - Chapter 02 #66

67. What is the class midpoint for the class with the greatest frequency?

A. $5.50
B. $8.50
C. $11.50
D. $14.50

AACSB: Analytic Skills
BLOOM: Application
Difficulty: Medium
Goal: 3
Lind - Chapter 02 #67

68. What are the class limits for the class with the smallest number of frequencies?

A. 3.5 and 6.5
B. 4 and up to 7
C. 13 and up to 16
D. 12.5 and 15.5

AACSB: Communication Abilities
BLOOM: Comprehension
Difficulty: Medium
Goal: 3
Lind - Chapter 02 #68

Refer to the following distribution of ages:

Ages	Number
40 up to 50	10
50 up to 60	28
60 up to 70	12

Lind - Chapter 02

69. For the distribution of ages above, what is the relative class frequency for the lowest class?

A. 50%
B. 18%
C. 20%
D. 10%

AACSB: Analytic Skills
BLOOM: Application
Difficulty: Medium
Goal: 3
Lind - Chapter 02 #69

70. What is the class interval?

A. 9
B. 10
C. 10.5
D. 11

AACSB: Communication Abilities
BLOOM: Comprehension
Difficulty: Medium
Goal: 3
Lind - Chapter 02 #70

71. What is the class midpoint of the highest class?

A. 54
B. 55
C. 64
D. 65

AACSB: Analytic Skills
BLOOM: Application
Difficulty: Medium
Goal: 3
Lind - Chapter 02 #71

Refer to the following information from a frequency distribution for heights of college women recorded to the nearest inch:
The first two class midpoints are 62.5" and 65.5".

Lind - Chapter 02

72. What is the class interval?

A. 1"
B. 2"
C. 2.5"
D. 3"

AACSB: Communication Abilities
BLOOM: Comprehension
Difficulty: Easy
Goal: 3
Lind - Chapter 02 #72

73. What are the class limits for the lowest class?

A. 61 and up to 64
B. 62 and up to 64
C. 62 and 65
D. 62 and 63

AACSB: Analytic Skills
BLOOM: Analysis
Difficulty: Hard
Goal: 3
Lind - Chapter 02 #73

74. What are the class limits for the third class?

A. 64 and up to 67
B. 67 and 69
C. 67 and up to 70
D. 66 and 68

AACSB: Analytic Skills
BLOOM: Analysis
Difficulty: Hard
Goal: 3
Lind - Chapter 02 #74

Refer to the following distribution:

Cost of Textbooks	Number
$25 up to $35	2
35 up to 45	5
45 up to 55	7
55 up to 65	20
65 up to 75	16

Lind - Chapter 02

75. What is the relative class frequency for the $25 up to $35 class?

A. 2%
B. 4%
C. 5%
D. 10%

AACSB: Analytic Skills
BLOOM: Comprehension
Difficulty: Medium
Goal: 3
Lind - Chapter 02 #75

76. What is the class midpoint for the $45 up to $55 class?

A. 49
B. 49.5
C. 50
D. 50.5

AACSB: Analytic Skills
BLOOM: Application
Difficulty: Medium
Goal: 3
Lind - Chapter 02 #76

77. What are the class limits for class with the highest frequency?

A. 55 and 64
B. 54 and 64
C. 55 and up to 65
D. 55 and 64.5

AACSB: Communication Abilities
BLOOM: Comprehension
Difficulty: Medium
Goal: 3
Lind - Chapter 02 #77

Refer to the following frequency distribution on days absent during a calendar year by employees of a manufacturing company:

Days Absent	Number of Employees
0 up to 3	60
3 up to 6	31
6 up to 9	14
9 up to 12	6
12 up to 15	2

Lind - Chapter 02

78. How many employees were absent between 3 up to 6 days?

A. 31
B. 29
C. 14
D. 2

AACSB: Communication Abilities
BLOOM: Comprehension
Difficulty: Easy
Goal: 4
Lind - Chapter 02 #78

79. How many employees were absent fewer than six days?

A. 60
B. 31
C. 91
D. 46

AACSB: Analytic Skills
BLOOM: Application
Difficulty: Hard
Goal: 4
Lind - Chapter 02 #79

80. How many employees were absent more than six days or more?

A. 8
B. 4
C. 22
D. 31

AACSB: Analytic Skills
BLOOM: Application
Difficulty: Hard
Goal: 4
Lind - Chapter 02 #80

81. How many employees were absent from 6 up to 12 days?

A. 20
B. 8
C. 12
D. 17

AACSB: Analytic Skills
BLOOM: Application
Difficulty: Hard
Goal: 4
Lind - Chapter 02 #81

Refer to the following breakdown of responses to a survey of room cleanliness in a hotel.

Response	Frequency
Not satisfied	20
Satisfied	40
Highly satisfied	20

Lind - Chapter 02

82. What is the class interval for the frequency table above?

A. 10
B. 20
C. 40
D. None of the above

AACSB: Communication Abilities
BLOOM: Comprehension
Difficulty: Easy
Goal: 1
Lind - Chapter 02 #82

83. What is the class with the greatest frequency?

A. Not satisfied
B. Satisfied
C. Highly satisfied
D. None of the above

AACSB: Communication Abilities
BLOOM: Comprehension
Difficulty: Easy
Goal: 1
Lind - Chapter 02 #83

84. What percent of the responses indicated that customers were satisfied?

A. 20
B. 25%
C. 50%
D. 100%

AACSB: Analytic Skills
BLOOM: Comprehension
Difficulty: Easy
Goal: 1
Lind - Chapter 02 #84

85. Draw a bar graph that illustrates the frequency table above.

graph with appropriate labels on horizontal (satisfaction) and vertical (frequency) axes. Bars showing approximate frequencies.

AACSB: Communication Abilities
BLOOM: Application
Difficulty: Easy
Goal: 1
Lind - Chapter 02 #85

86. Draw a bar graph that illustrates the relative frequencies.

graph with appropriate labels on horizontal (satisfaction) and vertical (relative frequency) axes. Bars showing approximate relative frequencies.

AACSB: Communication Abilities
BLOOM: Application
Difficulty: Easy
Goal: 1
Lind - Chapter 02 #86

87. Draw a pie chart that illustrates the relative frequencies.

The pie chart should be divided into three slices. The "satisfied" slice should be ½ of the pie, and "not satisfied" and "highly satisfied" slices should each be ¼ of the pie. The slices should be labeled.

AACSB: Communication Abilities
BLOOM: Application
Difficulty: Medium
Goal: 1
Lind - Chapter 02 #87

ch2 Summary

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