

Gravetter Chapter 02

Student: _____

1. What is the total number of scores for the distribution shown in the following table?

<u>X</u>	<u>f</u>
4	3
3	5
2	4
1	2

- A. 4
- B. 10
- C. 14
- D. 37

2. A sample of $n = 15$ scores ranges from a high of $X = 11$ to a low of $X = 3$. If these scores are placed in a frequency distribution table, how many X values will be listed in the first column?

- A. 8
- B. 9
- C. 11
- D. 15

3. For the following frequency distribution of quiz scores, how many individuals took the quiz?

<u>X</u>	<u>f</u>
5	6
4	5
3	5
2	3
1	2

- A. $n = 5$
- B. $n = 15$
- C. $n = 21$
- D. cannot be determined

4. For the following distribution of quiz scores, if a score of $X = 3$ or higher is needed for a passing grade, how many individuals passed?

<u>X</u>	<u>f</u>
5	6
4	5
3	5
2	3
1	2

- A. 3
- B. 11
- C. 16
- D. cannot be determined

5. For the following distribution of quiz scores, How many individuals had a score of $X = 2$?

<u>X</u>	<u>f</u>
5	6
4	5
3	5
2	3
1	2

- A. 1
- B. 3
- C. 5
- D. cannot be determined

6. For the following frequency distribution of exam scores, what is the lowest score on the exam?

<u>X</u>	<u>f</u>
90-94	3
85-89	4
80-84	5
75-79	2
70-74	1

- A. $x = 70$
- B. $x = 74$
- C. $x = 90$
- D. cannot be determined

7. For the following frequency distribution of exam scores, how many students had scores lower than $X = 80$?

<u>X</u>	<u>f</u>
90-94	3
85-89	4
80-84	5
75-79	2
<u>70-74</u>	<u>1</u>

- A. 2
- B. 3
- C. 7
- D. cannot be determined

8. In a grouped frequency distribution one interval is listed as 50-59. Assuming that the scores are measuring a continuous variable, what are the real limits of this interval?

- A. 50 and 59
- B. 50.5 and 59.5
- C. 49.5 and 59.5
- D. 49.5 and 60.5

9. For the following distribution, how many people had scores less than $X = 19$?

<u>X</u>	<u>f</u>
20-25	2
15-19	5
10-14	4
<u>5-9</u>	<u>1</u>

- A. 5
- B. 10
- C. 11
- D. cannot be determined

10. For the following distribution, what is the highest score?

<u>X</u>	<u>f</u>
20-25	2
15-19	5
10-14	4
<u>5-9</u>	<u>1</u>

- A. 5
- B. 20
- C. 25
- D. cannot be determined

11. For the following distribution, how many people had scores greater than $X = 14$?

<u>X</u>	<u>f</u>
20-25	2
15-19	5
10-14	4
<u>5-9</u>	<u>1</u>

- A. 5
- B. 7
- C. 11
- D. cannot be determined

12. For the following distribution, what is the width of each class interval?

<u>X</u>	<u>f</u>
20-25	2
15-19	5
10-14	4
<u>5-9</u>	<u>1</u>

- A. 4
- B. 4.5
- C. 5
- D. 10

13. If the following distribution was shown in a histogram, the bar above the 15-19 interval would reach from _____ to _____.

<u>X</u>	<u>f</u>
20-25	2
15-19	5
10-14	4
<u>5-9</u>	<u>1</u>

- A. $X = 14.5$ to $X = 19.5$
- B. $X = 15.5$ to $X = 18.5$
- C. $X = 15.5$ to $X = 19.5$
- D. $X = 15.0$ to $X = 19.0$

14. In a frequency distribution graph, frequencies are presented on the _____ and the scores (categories) are listed on the _____.

- A. X axis/Y axis
- B. horizontal line/vertical line
- C. Y axis/X axis
- D. class interval/horizontal line

15. What frequency distribution graph is appropriate for scores measured on a nominal scale?

- A. only a histogram
- B. only a polygon
- C. either a histogram or a polygon
- D. only a bar graph

16. The classrooms in the Psychology department are numbered from 100 to 108. A professor records the number of classes held in each room during the fall semester. If these values are presented in a frequency distribution graph, what kind of graph would be appropriate?

- A. a histogram
- B. a polygon
- C. a histogram or a polygon
- D. a bar graph

17. A researcher records the number of traffic tickets issued in each county along the New York State thruway. If the results are presented in a frequency distribution graph, what kind of graph should be used?

- A. a bar graph
- B. a histogram
- C. a polygon
- D. either a histogram or a polygon

18. What kind of frequency distribution graph shows the frequencies as bars, with no space between adjacent bars?

- A. a bar graph
- B. a histogram
- C. a polygon
- D. all of the above

19.

Figure 2.1

What scale of measurement was used to measure the scores in the distribution shown in the accompanying graph?

- A. nominal
- B. ordinal
- C. interval or ratio
- D. cannot be determined

20.

Figure 2.1

For the distribution in the accompanying graph, what is the value of SX ?

- A. 15
- B. 21
- C. 30
- D. cannot be determined

21. What kind of frequency distribution graph shows the frequencies as bars that are separated by spaces?

- A. a bar graph
- B. a histogram
- C. a polygon
- D. all of the above

22. If a frequency distribution is shown in a bar graph, what scale was used to measure the scores?

- A. nominal
- B. nominal or ordinal
- C. ratio
- D. interval or ration

23. The normal distribution is an example of ____.

- A. a histogram showing data from a sample
- B. a polygon showing data from a sample
- C. a bar graph showing data from a population
- D. a smooth curve showing data from a population

24. If a set of exam scores forms a symmetrical distribution, what can you conclude about the students scores?

- A. Most of the students had relatively high scores.
- B. Most of the students had relatively low scores.
- C. About 50% of the students had high scores and the rest had low scores.
- D. It is not possible the draw any conclusions about the students' scores.

25. What term is used to describe the shape of a distribution in which the scores pile up on the lefthand side of the graph and taper off to the right?

- A. symmetrical
- B. positively skewed
- C. negatively skewed
- D. normal

26.

Figure 2-2

What is the shape for the distribution shown in the accompanying graph?

- A. positively skewed
- B. negatively skewed
- C. symmetrical
- D. normal

27. A skewed distribution typically has ____ tail(s) and a normal distribution has ____ tail(s).

- A. 1, 1
- B. 1, 2
- C. 2, 1
- D. 2, 2

28. The students in a psychology class seemed to think that the midterm exam was very easy. If they are correct, what is the most likely shape for the distribution of exam scores?

- A. symmetrical
- B. positively skewed
- C. negatively skewed
- D. normal

29. In a distribution with positive skew, scores with the highest frequencies are ____.

- A. on the right side of the distribution
- B. on the left side of the distribution
- C. in the middle of the distribution
- D. represented at two distinct peaks

30. What is the shape of the distribution for the following set of data?

Scores: 1, 2, 3, 3, 4, 4, 4, 5, 5, 5, 5, 6

- A. symmetrical
- B. positively skewed
- C. negatively skewed
- D. cumulative

31. For the distribution in the following table, what is the 50th percentile?

<u>X</u>	<u>c%</u>
9	100%
8	80%
7	50%
<u>6</u>	<u>25%</u>

- A. $X = 8$
- B. $X = 7.5$
- C. $X = 7$
- D. $X = 6.5$

32. For the distribution in the following table, what is the percentile rank for $X = 8.5$?

<u>X</u>	<u>c%</u>
9	100%
8	80%
7	50%
<u>6</u>	<u>25%</u>

- A. $X = 90\%$
- B. $X = 80\%$
- C. $X = 65\%$
- D. $X = 50\%$

33. For the distribution in the following table, what is the 90th percentile?

<u>X</u>	<u>c%</u>
9	100%
8	80%
7	50%
<u>6</u>	<u>25%</u>

- A. $X = 9.5$
- B. $X = 9$
- C. $X = 8.5$
- D. $X = 8$

34. For the distribution in the following table, what is the percentile rank for $X = 7$?

<u>X</u>	<u>c%</u>
9	100%
8	80%
7	50%
<u>6</u>	<u>25%</u>

- A. $X = 80\%$
- B. $X = 65\%$
- C. $X = 50\%$
- D. $X = 37.5\%$

35. For the distribution in the following table, what is the 90th percentile?

<u>X</u>	<u>c%</u>
30-34	100%
25-29	90%
20-24	60%
<u>15-19</u>	<u>20%</u>

- A. $X = 24.5$
- B. $X = 25$
- C. $X = 29$
- D. $X = 29.5$

36. For the distribution in the following table, what is the percentile rank for $X = 24.5$?

<u>X</u>	<u>c%</u>
30-34	100%
25-29	90%
20-24	60%
<u>15-19</u>	<u>20%</u>

- A. 40%
- B. 60%
- C. 75%
- D. 90%

37. For the distribution in the following table, what is the 50th percentile?

<u>X</u>	<u>c%</u>
50-59	100%
40-49	90%
30-39	60%
<u>20-29</u>	<u>20%</u>

- A. $X = 32$
- B. $X = 35$
- C. $X = 37$
- D. $X = 39$

38. For the distribution in the following table, what is the percentile rank for $X = 32$?

<u>X</u>	<u>c%</u>
30-34	100%
25-29	90%
20-24	60%
<u>15-19</u>	<u>20%</u>

- A. 92%
- B. 92.5
- C. 95%
- D. 97.5%

39.

Figure 2-3

For the scores shown in the accompanying stem and leaf display, what is the highest score in the distribution?

- A. 8
- B. 83
- C. 84
- D. 7042

40. If the following scores were placed in a stem and leaf display, how many leaves would be associated with a stem of 6?

Scores: 26, 45, 62, 11, 21, 55, 66

64, 55, 46, 38, 41, 27, 29

36, 51, 32, 25, 34, 44, 59

- A. 1
- B. 2
- C. 3
- D. 4

41. A researcher surveys a sample of $n = 200$ college students and asks each person to identify his or her favorite movie from the past year. If the data were organized in a frequency distribution table, the first column would be a list of movies.

True False

42. A group of quiz scores ranges from 3 to 10, but no student had a score of $X = 5$. If the scores are put in a frequency distribution table, $X = 5$ would not be listed in the X column.

True False

43. It is customary to list the score categories in a frequency distribution from the highest down to the lowest.

True False

44. There is a total of $n = 5$ scores in the distribution shown in the following table.

<u>X</u>	<u>f</u>
5	2
4	8
3	5
2	3
<u>1</u>	<u>2</u>

True False

45. For the following distribution of scores, 20% of the individuals have scores of $X = 1$.

<u>X</u>	<u>f</u>
5	2
4	8
3	5
2	3
<u>1</u>	<u>2</u>

True False

46. For the following distribution of scores, $\sum X = 18$.

<u>X</u>	<u>f</u>
4	1
3	2
2	3
<u>1</u>	<u>2</u>

True False

47. For the following distribution of scores, $\sum X^2 = 92$.

<u>X</u>	<u>f</u>
4	1
3	2
2	3
<u>1</u>	<u>2</u>

True False

48. A grouped frequency distribution table lists one interval as, 20-29. The width of this interval is 9 points.

True False

49. In a grouped frequency distribution table, one interval is identified as 30-34. This interval has a width of 5 points.

True False

50. If a set of scores covers a range of 80 points, the grouped frequency table should use an interval width of 8 points.

True False

51. A set of scores ranges from $X = 18$ to $X = 91$. If the scores are put in a grouped frequency distribution table with an interval width of 10 points, the top interval would be 91-100.

True False

52. In a grouped frequency distribution table, the top value in each class interval should be a multiple of the interval width.

True False

53. A set of scores ranges from a low of $X = 18$ to a high of $X = 98$. If the scores are put in a grouped frequency distribution table with an interval width of 10 points, the bottom interval should be 10-19.

True False

54. A grouped frequency distribution table does not provide enough information to obtain a complete listing of the original set of scores.

True False

55. For the following distribution, seven people have scores greater than $X = 14$.

<u>X</u>	<u>f</u>
20-24	2
15-19	5
10-14	4
<u>5-9</u>	<u>1</u>

True False

56. In the following distribution, the scores are grouped into class intervals that are each 5 points wide.

<u>X</u>	<u>f</u>
20-24	2
15-19	5
10-14	4
<u>5-9</u>	<u>1</u>

True False

57. A professor records the number of students who are absent each day for the semester. Because this is a discrete variable, a bar graph should be used to show the frequency distribution.

True False

58. A researcher surveys a sample of $n = 200$ college students and asks each person to identify his or her favorite movie from the past year. If the results are presented in a frequency distribution graph, the researcher should use a bar graph.
True False

59. If it is appropriate to present a distribution of scores in a polygon, then it would also be appropriate to present the scores in a bar graph.
True False

60. A histogram is constructed so that adjacent bars touch.
True False

61. The normal distribution is an example of a symmetrical distribution.
True False

62. In February in New York, the daily high temperatures are typically low with only a few relatively warm days. A frequency distribution showing the daily high temperatures would probably form a negatively skewed distribution.
True False

63. The scores for a very easy exam would probably form a positively skewed distribution.
True False

64. If a set of exam scores forms a negatively skewed distribution, it suggests that the majority of the students did not score well on the exam.
True False

65. A score equal to the 5th percentile is one of the highest scores in the distribution.
True False

66. For the distribution in the following table, the 80th percentile is $X = 24$.

<u>X</u>	<u>c%</u>
25-29	100%
20-24	80%
15-19	20%

True False

67. For the distribution in the following table, the percentile rank for $X = 19.5$ is 20%.

<u>X</u>	<u>c%</u>
25-29	100%
20-24	80%
15-19	20%

True False

68. For the distribution in the following table, the 90th percentile is $X = 27.5$.

<u>X</u>	<u>c%</u>
25-29	100%
20-24	80%
15-19	20%

True False

69. For the distribution in the following table, the percentile rank for $X = 25$ is 82%.

<u>X</u>	<u>c%</u>
25-29	100%
20-24	80%
15-19	20%

True False

70. A stem and leaf display does not provide enough information to obtain a complete listing of the original set of scores.

True False

71. Find each value requested for the set of scores in the following frequency distribution table.

a. n	<u>X</u>	<u>f</u>
b. $\sum X$	5	1
c. $\sum X^2$	4	2
	3	3
	2	5
	1	2

72. Briefly explain what information is available in a regular frequency distribution table that is not available in a grouped table.

73. For the following scores:

a. Construct a frequency distribution table.

b. Sketch a histogram of the frequency distribution.

6, 4, 3, 5, 4, 2, 4

5, 4, 6, 1, 4, 5, 2

74. For the distribution shown in the following table:

a. Find the percentile rank for $X = 14.5$.

b. Find the 60th percentile.

c. Find the percentile rank for $X = 11$.

d. Find the 66th percentile.

<u>X</u>	<u>f</u>	<u>cf</u>	<u>c%</u>
25-29	4	25	100%
20-24	6	21	84%
15-19	7	15	60%

10-14 5 8 32%

5-9 3 3 12%

75. Construct a stem and leaf display for the following scores.

30, 23, 58, 28, 35, 67, 27, 42, 46, 35

51, 33, 18, 33, 25, 38, 48, 36, 31, 39

Gravetter Chapter 02 Key

1. What is the total number of scores for the distribution shown in the following table?

<u>X</u>	<u>f</u>
4	3
3	5
2	4
1	2

- A. 4
- B. 10
- C. 14**
- D. 37

2. A sample of $n = 15$ scores ranges from a high of $X = 11$ to a low of $X = 3$. If these scores are placed in a frequency distribution table, how many X values will be listed in the first column?

- A. 8
- B. 9**
- C. 11
- D. 15

3. For the following frequency distribution of quiz scores, how many individuals took the quiz?

<u>X</u>	<u>f</u>
5	6
4	5
3	5
2	3
1	2

- A. $n = 5$
- B. $n = 15$
- C. $n = 21$**
- D. cannot be determined

4. For the following distribution of quiz scores, if a score of $X = 3$ or higher is needed for a passing grade, how many individuals passed?

<u>X</u>	<u>f</u>
5	6
4	5
3	5
2	3
1	2

- A. 3
- B. 11
- C. 16**
- D. cannot be determined

5. For the following distribution of quiz scores, How many individuals had a score of $X = 2$?

<u>X</u>	<u>f</u>
5	6
4	5
3	5
2	3
1	2

- A. 1
- B. 3**
- C. 5
- D. cannot be determined

6. For the following frequency distribution of exam scores, what is the lowest score on the exam?

<u>X</u>	<u>f</u>
90-94	3
85-89	4
80-84	5
75-79	2
70-74	1

- A. $x = 70$
- B. $x = 74$
- C. $x = 90$
- D. cannot be determined**

7. For the following frequency distribution of exam scores, how many students had scores lower than $X = 80$?

<u>X</u>	<u>f</u>
90-94	3
85-89	4
80-84	5
75-79	2
<u>70-74</u>	<u>1</u>

- A. 2
- B. 3**
- C. 7
- D. cannot be determined

8. In a grouped frequency distribution one interval is listed as 50-59. Assuming that the scores are measuring a continuous variable, what are the real limits of this interval?

- A. 50 and 59
- B. 50.5 and 59.5
- C. 49.5 and 59.5**
- D. 49.5 and 60.5

9. For the following distribution, how many people had scores less than $X = 19$?

<u>X</u>	<u>f</u>
20-25	2
15-19	5
10-14	4
<u>5-9</u>	<u>1</u>

- A. 5
- B. 10
- C. 11
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10. For the following distribution, what is the highest score?

<u>X</u>	<u>f</u>
20-25	2
15-19	5
10-14	4
<u>5-9</u>	<u>1</u>

- A. 5
- B. 20
- C. 25
- D. cannot be determined**

11. For the following distribution, how many people had scores greater than $X = 14$?

<u>X</u>	<u>f</u>
20-25	2
15-19	5
10-14	4
<u>5-9</u>	<u>1</u>

- A. 5
- B. 7**
- C. 11
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12. For the following distribution, what is the width of each class interval?

<u>X</u>	<u>f</u>
20-25	2
15-19	5
10-14	4
<u>5-9</u>	<u>1</u>

- A. 4
- B. 4.5
- C. 5**
- D. 10

13. If the following distribution was shown in a histogram, the bar above the 15-19 interval would reach from _____ to _____.

<u>X</u>	<u>f</u>
20-25	2
15-19	5
10-14	4
<u>5-9</u>	<u>1</u>

- A. $X = 14.5$ to $X = 19.5$**
- B. $X = 15.5$ to $X = 18.5$
- C. $X = 15.5$ to $X = 19.5$
- D. $X = 15.0$ to $X = 19.0$

14. In a frequency distribution graph, frequencies are presented on the _____ and the scores (categories) are listed on the _____.

- A. X axis/Y axis
- B. horizontal line/vertical line
- C. Y axis/X axis**
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17. A researcher records the number of traffic tickets issued in each county along the New York State thruway. If the results are presented in a frequency distribution graph, what kind of graph should be used?

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Figure 2.1

What scale of measurement was used to measure the scores in the distribution shown in the accompanying graph?

- A. nominal
- B. ordinal
- C.** interval or ratio
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Figure 2.1

For the distribution in the accompanying graph, what is the value of SX ?

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B. 21

C. 30

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23. The normal distribution is an example of ____.

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B. a polygon showing data from a sample

C. a bar graph showing data from a population

D. a smooth curve showing data from a population

24. If a set of exam scores forms a symmetrical distribution, what can you conclude about the students scores?

A. Most of the students had relatively high scores.

B. Most of the students had relatively low scores.

C. About 50% of the students had high scores and the rest had low scores.

D. It is not possible the draw any conclusions about the students' scores.

25. What term is used to describe the shape of a distribution in which the scores pile up on the lefthand side of the graph and taper off to the right?

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B. positively skewed

C. negatively skewed

D. normal

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Figure 2-2

What is the shape for the distribution shown in the accompanying graph?

- A.** positively skewed
- B. negatively skewed
- C. symmetrical
- D. normal

27. A skewed distribution typically has ____ tail(s) and a normal distribution has ____ tail(s).

- A. 1, 1
- B.** 1, 2
- C. 2, 1
- D. 2, 2

28. The students in a psychology class seemed to think that the midterm exam was very easy. If they are correct, what is the most likely shape for the distribution of exam scores?

- A. symmetrical
- B. positively skewed
- C.** negatively skewed
- D. normal

29. In a distribution with positive skew, scores with the highest frequencies are ____.

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- B.** on the left side of the distribution
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Scores: 1, 2, 3, 3, 4, 4, 4, 5, 5, 5, 5, 6

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- C.** negatively skewed
- D. cumulative

31. For the distribution in the following table, what is the 50th percentile?

<u>X</u>	<u>c%</u>
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8	80%
7	50%
<u>6</u>	<u>25%</u>

- A. $X = 8$
- B. $X = 7.5$**
- C. $X = 7$
- D. $X = 6.5$

32. For the distribution in the following table, what is the percentile rank for $X = 8.5$?

<u>X</u>	<u>c%</u>
9	100%
8	80%
7	50%
<u>6</u>	<u>25%</u>

- A. $X = 90\%$
- B. $X = 80\%$**
- C. $X = 65\%$
- D. $X = 50\%$

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<u>X</u>	<u>c%</u>
9	100%
8	80%
7	50%
<u>6</u>	<u>25%</u>

- A. $X = 9.5$
- B. $X = 9$**
- C. $X = 8.5$
- D. $X = 8$

34. For the distribution in the following table, what is the percentile rank for $X = 7$?

<u>X</u>	<u>c%</u>
9	100%
8	80%
7	50%
<u>6</u>	<u>25%</u>

- A. $X = 80\%$
- B. $X = 65\%$
- C. $X = 50\%$
- D. $X = 37.5\%$**

35. For the distribution in the following table, what is the 90th percentile?

<u>X</u>	<u>c%</u>
30-34	100%
25-29	90%
20-24	60%
<u>15-19</u>	<u>20%</u>

A. $X = 24.5$

B. $X = 25$

C. $X = 29$

D. $X = 29.5$

36. For the distribution in the following table, what is the percentile rank for $X = 24.5$?

<u>X</u>	<u>c%</u>
30-34	100%
25-29	90%
20-24	60%
<u>15-19</u>	<u>20%</u>

A. 40%

B. 60%

C. 75%

D. 90%

37. For the distribution in the following table, what is the 50th percentile?

<u>X</u>	<u>c%</u>
50-59	100%
40-49	90%
30-39	60%
<u>20-29</u>	<u>20%</u>

A. $X = 32$

B. $X = 35$

C. $X = 37$

D. $X = 39$

38. For the distribution in the following table, what is the percentile rank for $X = 32$?

<u>X</u>	<u>c%</u>
30-34	100%
25-29	90%
20-24	60%
<u>15-19</u>	<u>20%</u>

A. 92%

B. 92.5

C. 95%

D. 97.5%

39.

Figure 2-3

For the scores shown in the accompanying stem and leaf display, what is the highest score in the distribution?

- A. 8
- B. 83
- C. 84**
- D. 7042

40. If the following scores were placed in a stem and leaf display, how many leaves would be associated with a stem of 6?

Scores: 26, 45, 62, 11, 21, 55, 66

64, 55, 46, 38, 41, 27, 29

36, 51, 32, 25, 34, 44, 59

- A. 1
- B. 2
- C. 3**
- D. 4

41. A researcher surveys a sample of $n = 200$ college students and asks each person to identify his or her favorite movie from the past year. If the data were organized in a frequency distribution table, the first column would be a list of movies.

TRUE

42. A group of quiz scores ranges from 3 to 10, but no student had a score of $X = 5$. If the scores are put in a frequency distribution table, $X = 5$ would not be listed in the X column.

FALSE

43. It is customary to list the score categories in a frequency distribution from the highest down to the lowest.

TRUE

44. There is a total of $n = 5$ scores in the distribution shown in the following table.

<u>X</u>	<u>f</u>
5	2
4	8
3	5
2	3
<u>1</u>	<u>2</u>

FALSE

45. For the following distribution of scores, 20% of the individuals have scores of $X = 1$.

<u>X</u>	<u>f</u>
5	2
4	8
3	5
2	3
<u>1</u>	<u>2</u>

FALSE

46. For the following distribution of scores, $\sum X = 18$.

<u>X</u>	<u>f</u>
4	1
3	2
2	3
<u>1</u>	<u>2</u>

TRUE

47. For the following distribution of scores, $\sum X^2 = 92$.

<u>X</u>	<u>f</u>
4	1
3	2
2	3
<u>1</u>	<u>2</u>

FALSE

48. A grouped frequency distribution table lists one interval as, 20-29. The width of this interval is 9 points.

FALSE

49. In a grouped frequency distribution table, one interval is identified as 30-34. This interval has a width of 5 points.

TRUE

50. If a set of scores covers a range of 80 points, the grouped frequency table should use an interval width of 8 points.

FALSE

51. A set of scores ranges from $X = 18$ to $X = 91$. If the scores are put in a grouped frequency distribution table with an interval width of 10 points, the top interval would be 91-100.

FALSE

52. In a grouped frequency distribution table, the top value in each class interval should be a multiple of the interval width.

FALSE

53. A set of scores ranges from a low of $X = 18$ to a high of $X = 98$. If the scores are put in a grouped frequency distribution table with an interval width of 10 points, the bottom interval should be 10-19.

TRUE

54. A grouped frequency distribution table does not provide enough information to obtain a complete listing of the original set of scores.

TRUE

55. For the following distribution, seven people have scores greater than $X = 14$.

<u>X</u>	<u>f</u>
20-24	2
15-19	5
10-14	4
5-9	1

TRUE

56. In the following distribution, the scores are grouped into class intervals that are each 5 points wide.

<u>X</u>	<u>f</u>
20-24	2
15-19	5
10-14	4
5-9	1

TRUE

57. A professor records the number of students who are absent each day for the semester. Because this is a discrete variable, a bar graph should be used to show the frequency distribution.

FALSE

58. A researcher surveys a sample of $n = 200$ college students and asks each person to identify his or her favorite movie from the past year. If the results are presented in a frequency distribution graph, the researcher should use a bar graph.

TRUE

59. If it is appropriate to present a distribution of scores in a polygon, then it would also be appropriate to present the scores in a bar graph.

FALSE

60. A histogram is constructed so that adjacent bars touch.

TRUE

61. The normal distribution is an example of a symmetrical distribution.

TRUE

62. In February in New York, the daily high temperatures are typically low with only a few relatively warm days. A frequency distribution showing the daily high temperatures would probably form a negatively skewed distribution.

TRUE

63. The scores for a very easy exam would probably form a positively skewed distribution.

FALSE

64. If a set of exam scores forms a negatively skewed distribution, it suggests that the majority of the students did not score well on the exam.

TRUE

65. A score equal to the 5th percentile is one of the highest scores in the distribution.

FALSE

66. For the distribution in the following table, the 80th percentile is $X = 24$.

<u>X</u>	<u>c%</u>
25-29	100%
20-24	80%
15-19	20%

FALSE

67. For the distribution in the following table, the percentile rank for $X = 19.5$ is 20%.

<u>X</u>	<u>c%</u>
25-29	100%
20-24	80%
15-19	20%

TRUE

68. For the distribution in the following table, the 90th percentile is $X = 27.5$.

<u>X</u>	<u>c%</u>
25-29	100%
20-24	80%
15-19	20%

FALSE

69. For the distribution in the following table, the percentile rank for $X = 25$ is 82%.

<u>X</u>	<u>c%</u>
25-29	100%
20-24	80%
15-19	20%

TRUE

70. A stem and leaf display does not provide enough information to obtain a complete listing of the original set of scores.

FALSE

71. Find each value requested for the set of scores in the following frequency distribution table.

a. n	<u>X</u>	<u>f</u>
b. SX	5	1
c. SX^2	4	2
	3	3
	2	5
	1	2

- a. $n = 13$
- b. $\sum X = 34$
- c. $\sum X^2 = 106$

72. Briefly explain what information is available in a regular frequency distribution table that is not available in a grouped table.

A regular table identifies each individual score exactly. However, in a grouped table, you simply know that an individual score is located in a particular interval, but you do not know its exact value.

73. For the following scores:

- a. Construct a frequency distribution table.
- b. Sketch a histogram of the frequency distribution.

6, 4, 3, 5, 4, 2, 4

5, 4, 6, 1, 4, 5, 2

74. For the distribution shown in the following table:

X	f	cf	$c\%$
25-29	4	25	100%
20-24	6	21	84%
15-19	7	15	60%
10-14	5	8	32%
5-9	3	3	12%

- a. 32%
- b. $X = 19.5$
- c. 18*
- d. $X = 20.75$

75. Construct a stem and leaf display for the following scores.

30, 23, 58, 28, 35, 67, 27, 42, 46, 35

51, 33, 18, 33, 25, 38, 48, 36, 31, 39

6 | 7

5 | 18

4 | 826

3 | 033586159

2 | 3857

1 | 8