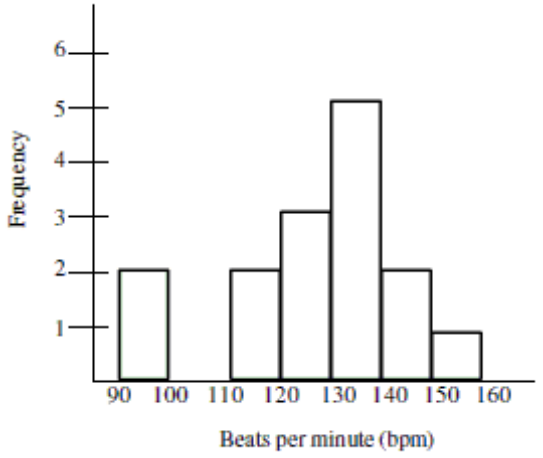
Exam

Name_____

MULTIPLE CHOICE. Choose the one alternative that best completes the statement or answers the question.

A fitness instructor measured the heart rates of the participants in a yoga class at the conclusion of the class. The data is summarized in the histogram below. There were fifteen people who participated in the class between the ages of 25 and 45. Use the histogram to answer the question.



1) What is the approximate percentage of participants had a heart rate less than 130 bpm? 1) _____

A) 13% B) 33% C) 47% D) 53%

Answer: C

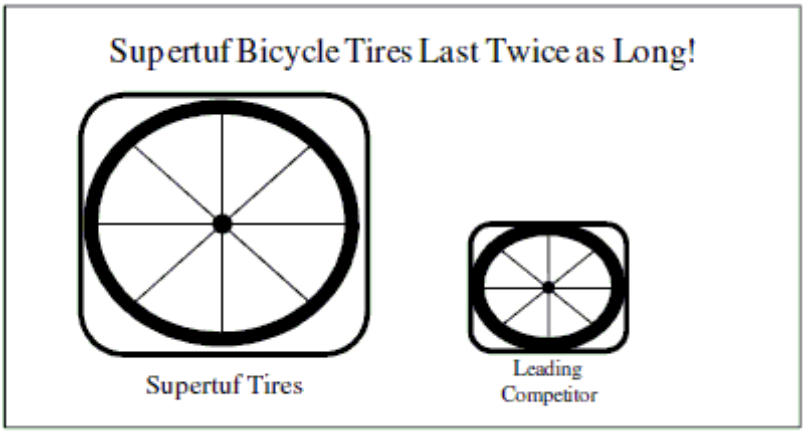
Explanation: A)

B)

C)

D)

2) The following graphic was used to visually summarize the following statement made by Supertuf Bicycle Tire Company in a recent magazine advertisement: "*Our patented Supertuf bicycle tire design lasts twice as long as the leading competitor's tire design.*" Does the graphic correctly represent the statement made in the advertisement? 2) _____



A) Not enough information available to make a judgment. More information is needed about how long Supertuf tires last and how long the leading competitor's tires last.
B) Yes, the area of the first tire is twice the area of the second tire.
C) No, although the dimensions have doubled, the area of the first tire is more than twice the area of the second tire so the graphic incorrectly represents what is stated in the advertisement.

Answer: C
Explanation: A)
B)
C)

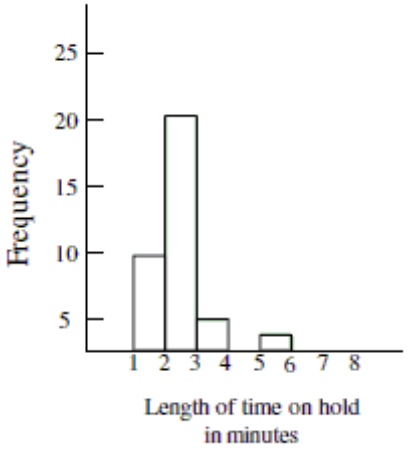
3) A collection of twenty college students was asked how much cash they currently had in their possession. The data is summarized in the stemplot below. How many students had between forty and fifty dollars in their possession? 3) _____

0	5
1	0 2 2
2	2
3	0 0 3 3 9
4	0 0 0 2 3 5 6 6
5	1
6	7

A) 9
B) 10
C) 8
D) Not enough information available

Answer: C
Explanation: A)
B)
C)
D)

4) Based on the histogram below, would it be unusual to be on hold for 5 minutes or more at this call center? 4) _____



A) Not enough information given.
B) Yes, it would be unusual.
C) No, it would not be unusual.

Answer: B
Explanation: A)
B)
C)

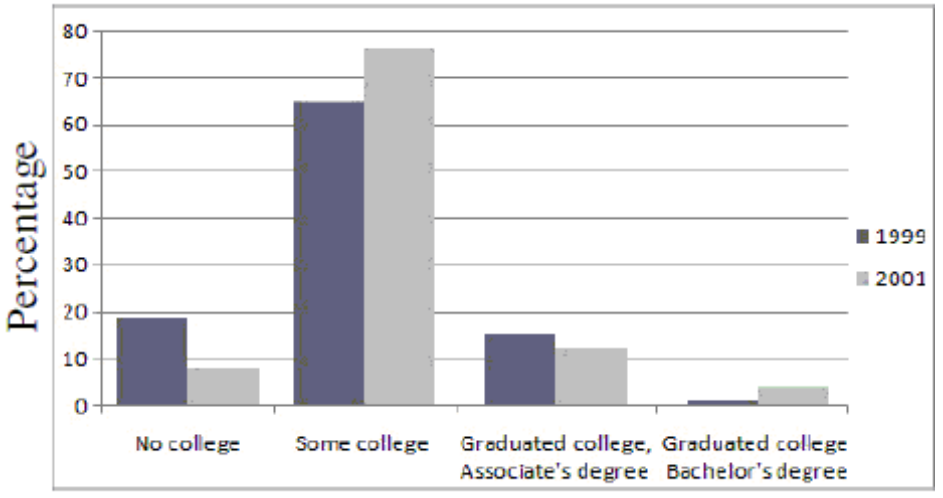
5) A collection of twenty college students was asked how much cash they currently had in their possession. The data is summarized in the stemplot below. Typically, how much money does a student have in his or her possession? 5) _____

0	5
1	0 2 2
2	2
3	0 0 3 3 9
4	0 0 0 2 3 5 6 6
5	1
6	7

A) $60-$70
B) Not enough information available
C) $40-$50
D) $30-$40

Answer: C
Explanation: A)
B)
C)
D)

The following side-by-side bar graph shows the level of post-secondary education achieved ten years after high school for graduates from the years 1999 and 2001. Use the bar graph to answer the question.



6) What was the most common response for 1999? 6) _____

A) No College B) Some College

C) Graduated College, Bachelor's Degree D) Graduated College, Associate's Degree

Answer: B

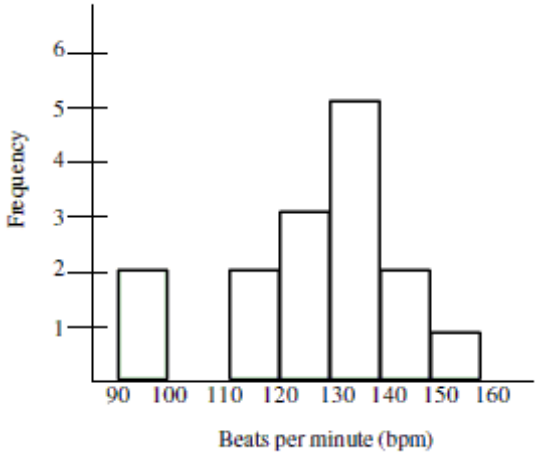
Explanation: A)

B)

C)

D)

A fitness instructor measured the heart rates of the participants in a yoga class at the conclusion of the class. The data is summarized in the histogram below. There were fifteen people who participated in the class between the ages of 25 and 45. Use the histogram to answer the question.



7) What percentage of the participants had a heart rate greater than 130 bpm? 7) _____

A) 53% B) 33% C) 27% D) 13%

Answer: A

Explanation: A)

B)

C)

D)

8) Data was collected on the heights of a group of five boy scouts, between the ages of seven and eleven. The following heights were recorded in inches: 29, 60, 52, 57, 52. Choose the true statement: 8) _____

A) Although the smallest value does not fit the pattern, it should not be altogether disregarded.
B) The gap between the two smallest values indicates an outlier may be present.
C) The smallest value is so extreme that it is possible that a mistake was made in recording the data.
D) All of these are true statements.

Answer: D
Explanation: A)
B)
C)
D)

9) Find the original data set from the stemplot given below. 9) _____

45	0 0 1 5
46	2 2 3
47	8 9 9

A) 450, 450, 451, 455, 462, 462, 463
B) 45, 41, 45, 46, 42, 42, 43, 47, 48, 49, 49
C) 450, 450, 451, 455, 462, 462, 463, 478, 479, 479
D) 450, 451, 455, 462, 463, 478, 479

Answer: C
Explanation: A)
B)
C)
D)

10) Each day for twenty days a record store owner counts the number of customers who purchase an album by a certain artist. The data and a dotplot of the data are shown below: 10) _____

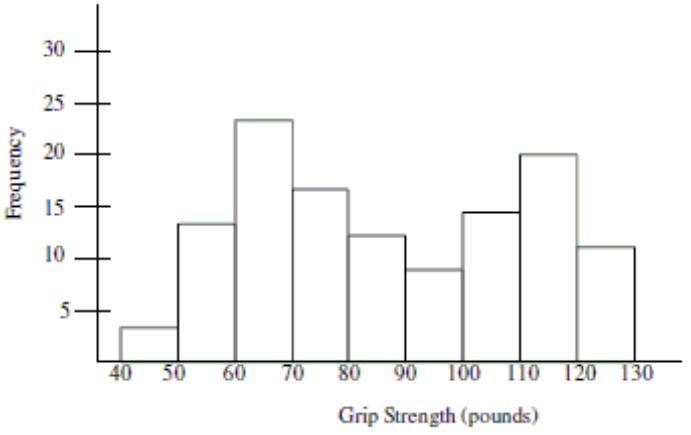
Data set: 1, 3, 4, 4, 5, 6, 7, 2, 3, 4, 4, 5, 6, 8, 2, 3, 4, 5, 6, 7, 9

Which of the following statements can be made using the given information?

A) During the twenty days when the record store owner collected data, there were some days when no one purchased an album by the artist.
B) On the first day of collecting data the record store owner had one person purchase an album by the artist.
C) The dotplot shows that this data has a roughly bell-shaped distribution.
D) None of these

Answer: C
Explanation: A)
B)
C)
D)

11) Data were collected on hand grip strength of adults. The histogram below summarizes the data. Which statement is true about the distribution of the data shown in the graph? 11) _____



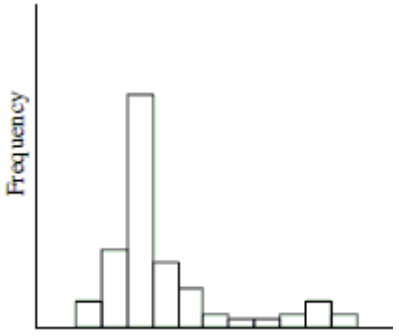
A) There must have been a mistake made in data collection because the distribution should be bell-shaped.
B) The graph shows evidence that two different groups may have been combined into one collection.
C) The best estimate of typical grip strength is 80-90 pounds because it is in the center of the distribution.
D) The graph is useless because it is bimodal.

Answer: B
Explanation: A)
B)
C)
D)

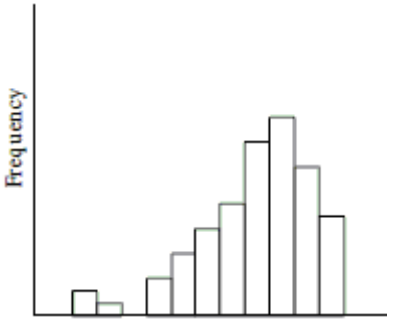
Choose the histogram that matches the description.

12) The distribution of heights of adult males tends to be symmetrical. 12) _____

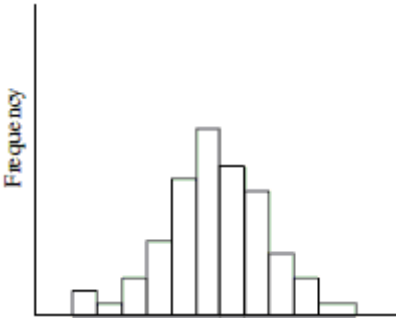
A)



B)



C)



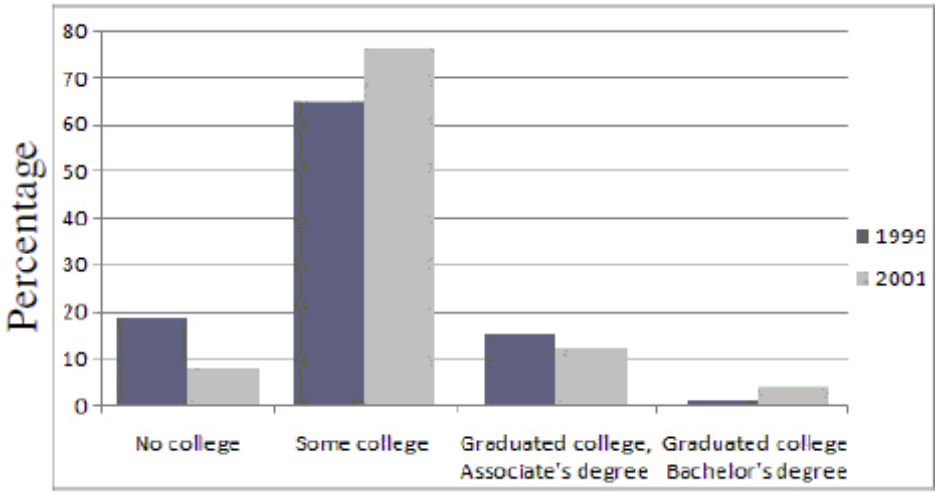
Answer: C

Explanation: A)

B)

C)

The following side-by-side bar graph shows the level of post-secondary education achieved ten years after high school for graduates from the years 1999 and 2001. Use the bar graph to answer the question.



13) Which category shows the least amount of variation between years? 13) _____

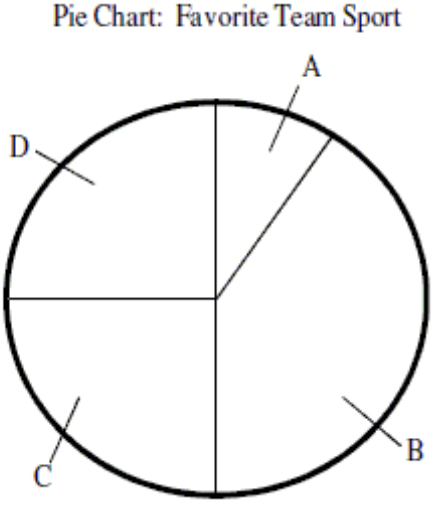
A) Some College
B) Graduated College, Associate's Degree
C) No College
D) Graduated College, Bachelor's Degree

Answer: C

Explanation: A)
B)
C)
D)

14) A group of junior high athletes was asked what team sport was their favorite. The data are summarized in the table below. On the pie chart, which area would correspond to the category "Soccer"? 14) _____

Team Sport	Frequency
Soccer	12
Volleyball	28
Basketball	20
Football	20



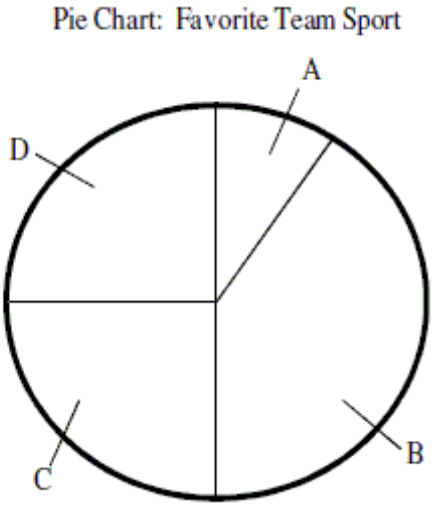
A) Area A
B) Area B
C) Area C
D) Area D

Answer: A

Explanation: A)
B)
C)
D)

15) A group of junior high athletes was asked what team sport was their favorite. The data are summarized in the table below. On the pie chart, which area would correspond to the category "Volleyball"? 15) _____

Team Sport	Frequency
Soccer	12
Volleyball	28
Basketball	20
Football	20



A) Area A B) Area B C) Area C D) Area D

Answer: B

Explanation: A)
B)
C)
D)

16) For twenty days a record store owner counts the number of customers who purchase an album by a certain artist. The data and a dotplot of the data are shown below: 16) _____

Data set: 1, 3, 4, 4, 5, 6, 7, 2, 3, 4, 4, 5, 6, 8, 2, 3, 4, 5, 6, 7, 9

Which of the following statements can be made using the given information?

A) On five of the twenty days observed by the record store owner, there were four albums by the artist purchased.

B) The dotplot shows that this data has a roughly bell-shaped distribution.

C) During the twenty days when the record store owner collected data, at least one album by the artist was purchased each day.

D) All of these

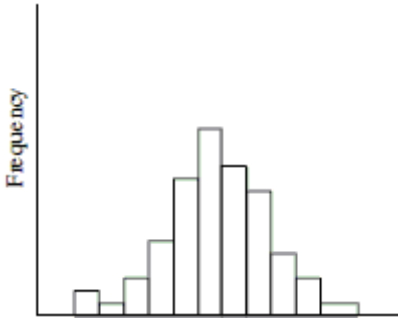
Answer: D

Explanation: A)
B)
C)
D)

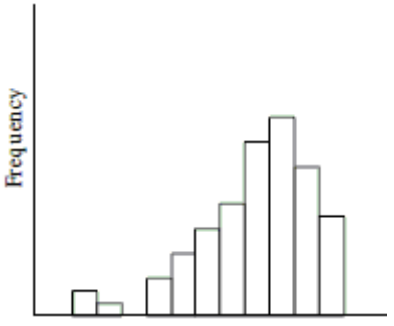
Choose the histogram that matches the description.

17) The distribution of test scores for a group of adults on a written driving exam following a refresher course tends to be left-skewed. 17) _____

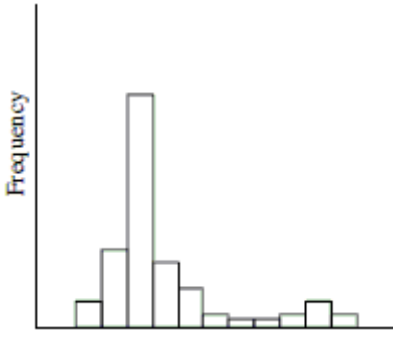
A)



B)



C)



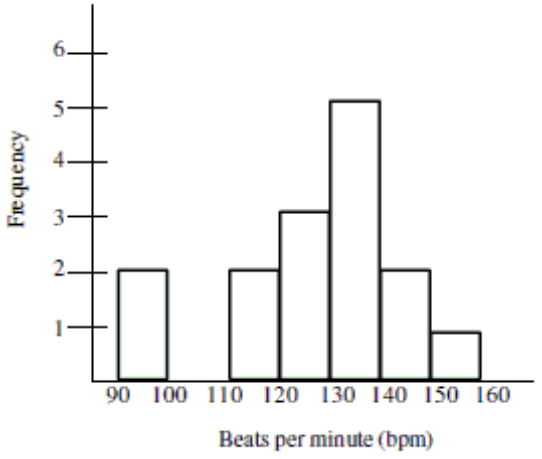
Answer: B

Explanation: A)

B)

C)

A fitness instructor measured the heart rates of the participants in a yoga class at the conclusion of the class. The data is summarized in the histogram below. There were fifteen people who participated in the class between the ages of 25 and 45. Use the histogram to answer the question.



18) How many participants had a heart rate between 140 and 150 bpm? 18) _____

A) 3 B) 2 C) 4 D) 5

Answer: B

Explanation: A)
B)
C)
D)

19) How many participants had a heart rate between 120 and 130 bpm? 19) _____

A) 5 B) 3 C) 2 D) 4

Answer: B

Explanation: A)
B)
C)
D)

20) The following graphic was used to visually summarize the following statement made by Incredi-gro Fertilizer Company in a recent newspaper advertisement: "*Our new Incredi-gro Fertilizer for flowers will grow your flowers two times faster than water alone.*" 20) _____

A) No, although the dimensions have doubled, the area of the first flower is one quarter of the area of the second flower so the graphic incorrectly represents what is stated in the advertisement.
B) Yes, the area of the first flower is half the area of the second flower.
C) Not enough information available to make a judgment. More information is need about how fast flowers treated with incredi-gro fertilizer will grow and how fast flowers treated with water alone will grow.

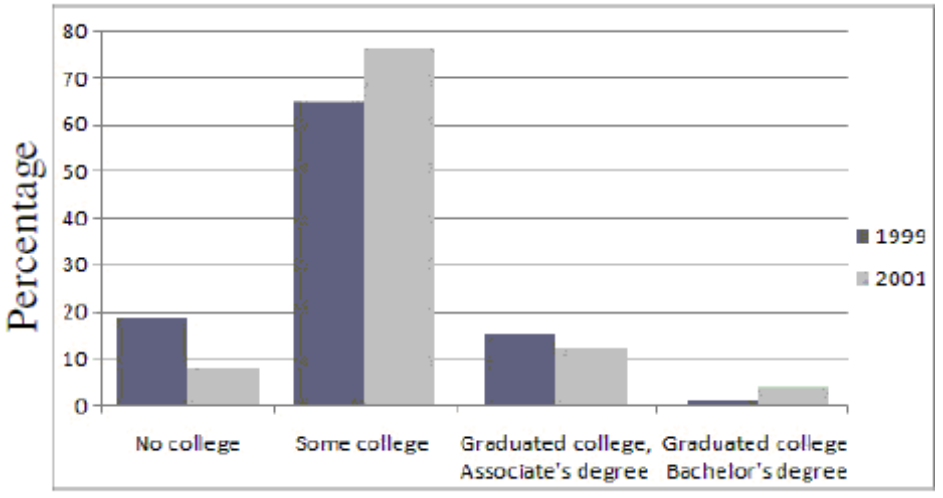
Answer: A
Explanation: A)
B)
C)

21) Which of the following statements about bar graphs is true? 21) _____

A) On a bar graph, the width of the bars has no meaning.
B) It sometimes doesn't matter in which order you place the bars representing different categories.
C) It is appropriate to have gaps between the bars on the graph.
D) All of these are true for bar graphs.

Answer: D
Explanation: A)
B)
C)
D)

The following side-by-side bar graph shows the level of post-secondary education achieved ten years after high school for graduates from the years 1999 and 2001. Use the bar graph to answer the question.



22) In which category was there more variability apparent? 22) _____

A) Graduated College, Bachelor's Degree B) Graduated College, Associate's Degree

C) No College D) Some College

Answer: C

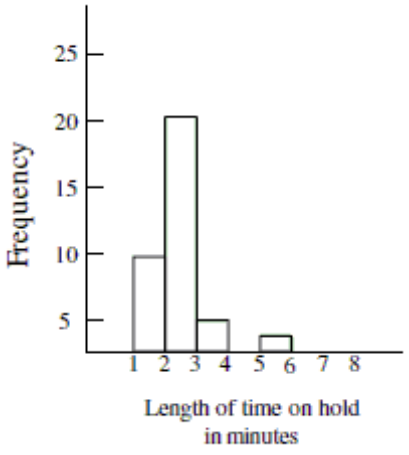
Explanation: A)

B)

C)

D)

23) Which of the following statements best describes the distribution and variability of the histogram below? The data in the histogram summarizes length of time on hold for a collection of customers calling a repair call center. 23) _____



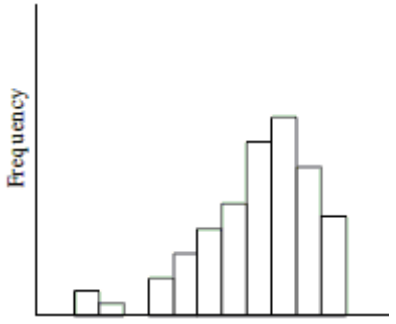
A) The distribution shows that the data was highly variable with some callers waiting on hold as many as 20 minutes.
B) The distribution is left-skewed and most callers waited on hold at least three minutes.
C) The distribution is symmetrical. The number of callers who waited on hold for less than three minutes was the same as the number of callers who waited on hold for more than three minutes.
D) The distribution is right-skewed and most callers waited on hold less than three minutes.

Answer: D
Explanation: A)
B)
C)
D)

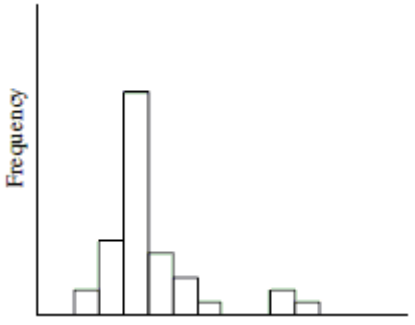
Choose the histogram that matches the description.

24) The distribution of the numbers of times individuals in the 18-24 age group log onto a social networking website during the course of a day tends to be right-skewed. 24) _____

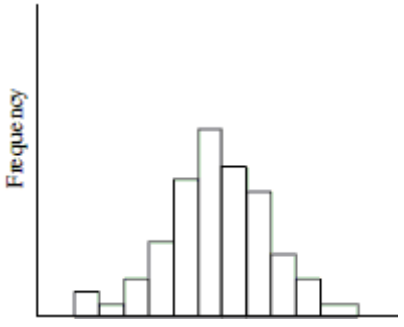
A)



B)



C)



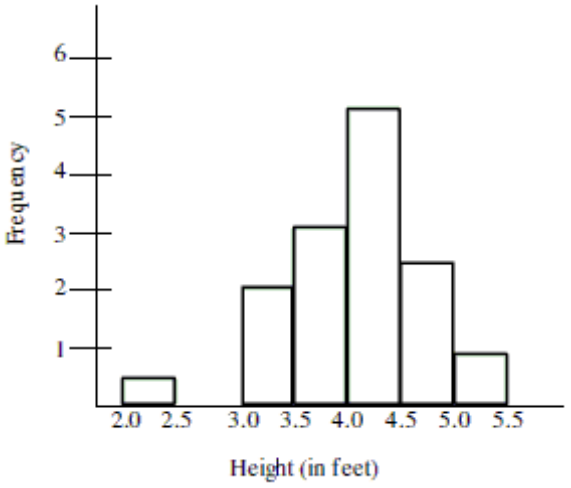
Answer: B

Explanation: A)

B)

C)

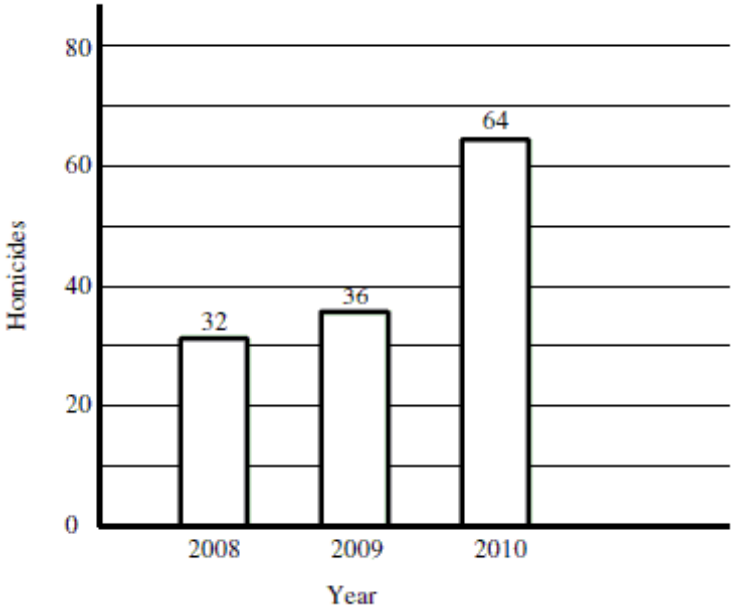
25) The histogram below is the distribution of heights for a randomly selected Boy Scout troupe. Choose the statement that is true based on information from the histogram. 25) _____



A) The smallest value is so extreme that it is possible that a mistake was made in recording the data.
B) The gap between the two smallest values indicates an outlier may be present.
C) Although the smallest value does not fit the pattern, it should not be altogether disregarded. It is
possible that the Boy Scout is 2.4 feet tall.
D) All of these are true statements.

Answer: D
Explanation: A)
B)
C)
D)

26) The graph below displays the number of homicides in the city of Flint, Michigan for each of the last three years. A reported interprets this graph to mean that the number of murders in 2010 was more than twice the number of murders in 2008. Is the reporter making a correct interpretation? 26) _____



A) No. The width of the bars is identical, indicating that the number of murders in 2010 is no different from 2008.

B) There is not enough information given in the graph to determine whether the reporter's interpretation is correct or not.

C) Yes. The bar for 2010 is twice the height of the bar for 2008 and the number of murders indicated above the bars confirms that murders in 2010 were more than twice the level in 2008.

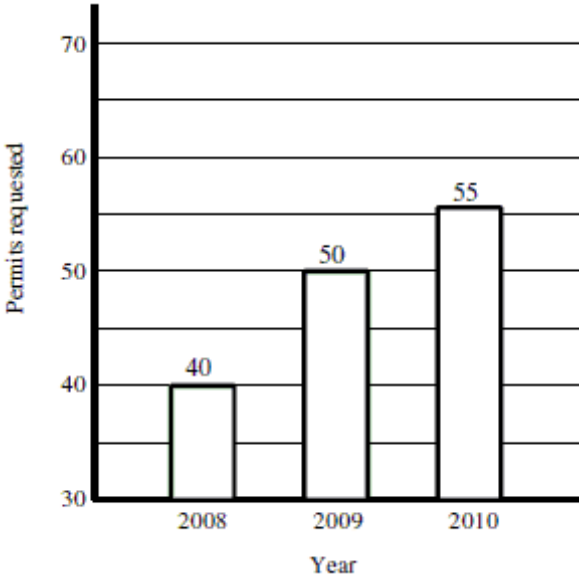
Answer: C

Explanation: A)

B)

C)

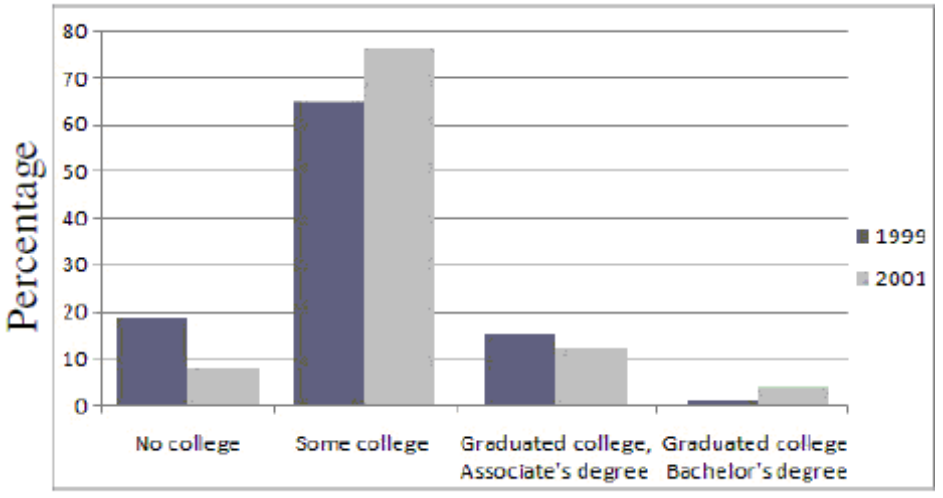
27) The graph below displays the number of applications for a concealed weapons permit in Montcalm County, Michigan, for each of three years. A reported interprets this graph to mean that applications in 2010 are more than twice the level in 2008. Is the reported making a correct interpretation? 27) _____



A) Yes. The bar for 2010 is twice the height of the bar for 2008 and the number of applications indicated above the bars shows that applications in 2010 are more than twice the level in 2008.
B) No. Although the 2010 bar is more than twice the height of the 2008, the bars do not begin at 0 applications, so the graph does not correctly represent the data. Fifty-five is not equal to two times the number of applications made in 2008.
C) No. The width of the bars is identical, indicating that the number of applications in 2010 is no different from 2008.

Answer: B
Explanation: A)
B)
C)

The following side-by-side bar graph shows the level of post-secondary education achieved ten years after high school for graduates from the years 1999 and 2001. Use the bar graph to answer the question.



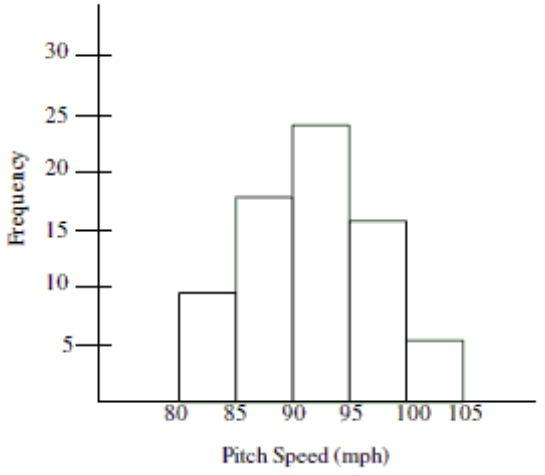
28) What is the mode response for 2001? 28) _____

A) No College
B) Some College
C) Graduated College, Associate's Degree
D) Graduated College, Bachelor's Degree

Answer: B

Explanation: A)
B)
C)
D)

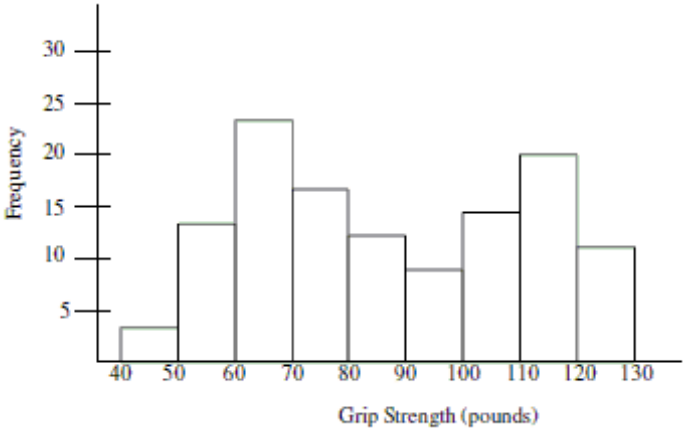
29) The histogram shows the distribution of pitch speeds for a sample of 75 pitches for a college pitcher during one season. Which of the following statements best describes the distribution of the histogram below? 29) _____



A) The distribution has a large amount of variation which can be seen by comparing the heights of the bars in the histogram.
B) The distribution is left-skewed and shows that most of the pitches were less than 95 mph.
C) The distribution is symmetric around a pitch speed of about 93 mph.
D) The distribution is right-skewed and shows that most of the pitches were more than 90 mph.

Answer: C
Explanation: A)
B)
C)
D)

30) Data was collected on hand grip strength of adults. The histogram below summarizes the data. Which statement is true about the distribution of the data shown in the graph? 30) _____



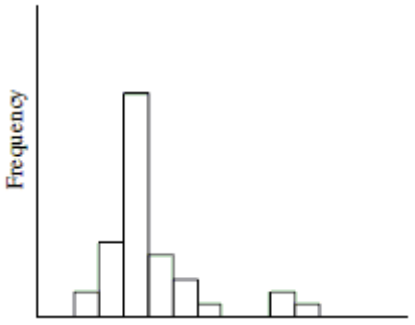
A) The graph shows evidence that two different groups may have been combined into one collection.
B) The graph is useless because it is bimodal.
C) There must have been a mistake made in data collection because the distribution should be bell-shaped.
D) The best estimate of typical grip strength is 80-90 pounds because it is in the center of the distribution.

Answer: A
Explanation: A)
B)
C)
D)

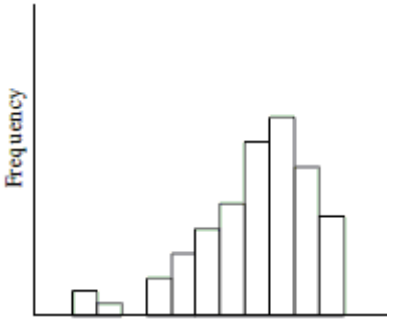
Choose the histogram that matches the description.

31) The distribution of heights of adult females tends to be symmetrical. 31) _____

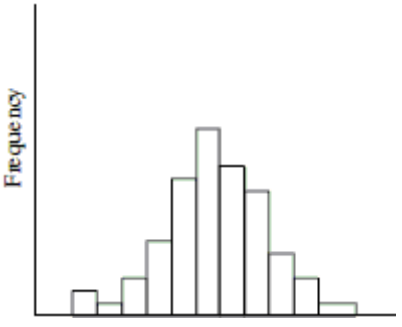
A)



B)



C)



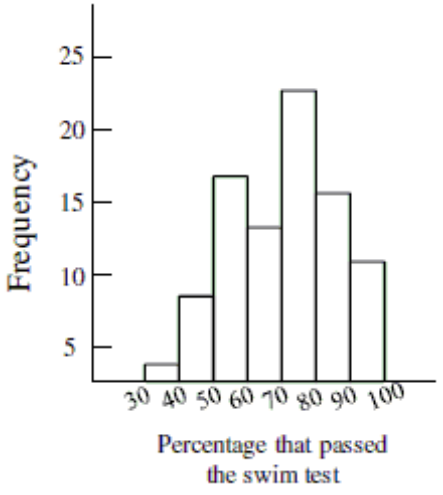
Answer: C

Explanation: A)

B)

C)

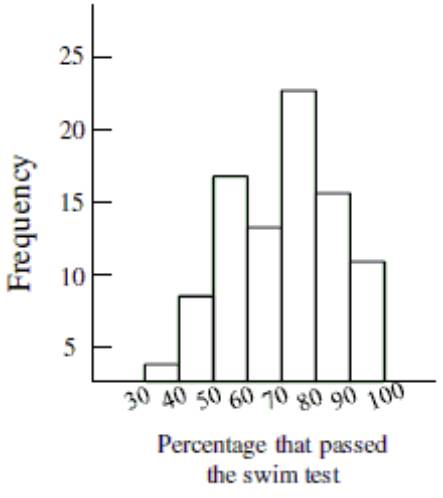
32) The histogram below shows the distribution of pass rates on a swimming test of all children who completed a four week summer swim course at the local YMCA. What is the typical pass rate for the swim test? 32) _____



A) About 55%
B) About 95%
C) Not enough information available
D) About 75%

Answer: D
Explanation: A)
B)
C)
D)

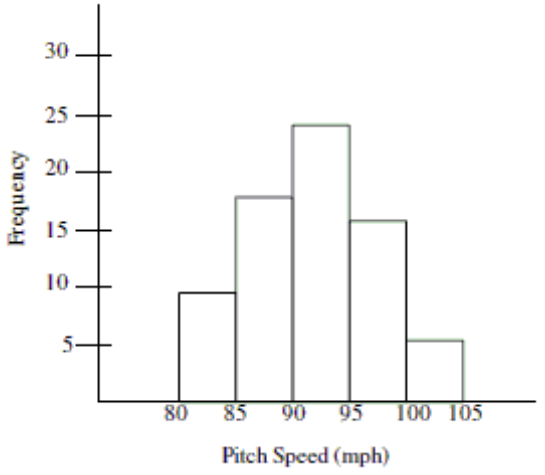
33) The histogram below shows the distribution of pass rates on a swimming test of all children who completed a four week summer swim course at the local YMCA. How many of the courses had a pass rate less than 40 percent? 33) _____



A) Not enough information available
B) About 5
C) About 3
D) About 8

Answer: C
Explanation: A)
B)
C)
D)

34) The data in the histogram summarizes the pitch speed of a sample of 75 pitches for a college pitcher during one season. Which of the following statements best describes the distribution of the histogram below? 34) _____



A) The distribution is right-skewed and shows that most of the pitches were more than 90 mph.
B) The distribution has a large amount of variation which can be seen by comparing the heights of the bars in the histogram.
C) The distribution is left-skewed and shows that most of the pitches were less than 95 mph.
D) The distribution is symmetric around a pitch speed of about 93 mph.

Answer: D
Explanation: A)
B)
C)
D)

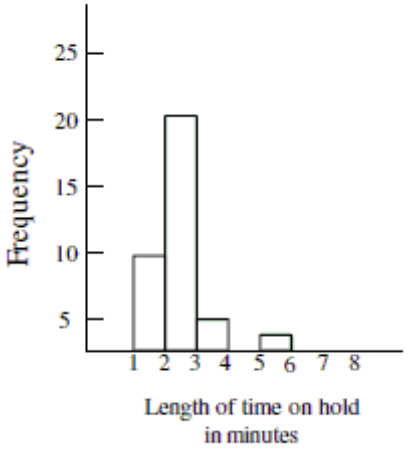
35) Find the original data set from the stemplot given below. 35) _____

45	0 0 1 5
46	2 2 3
47	0 8 9 9 9

A) 45, 41, 45, 46, 42, 42, 43, 47, 40, 48, 49, 49, 49
B) 450, 451, 455, 462, 463, 470, 478, 479
C) 450, 450, 451, 455, 462, 462, 463
D) 450, 450, 451, 455, 462, 462, 463, 470, 478, 479, 479, 479

Answer: D
Explanation: A)
B)
C)
D)

36) Based on the histogram below, would it be unusual to be on hold for at least 6 minutes at this call center? 36) _____



A) Not enough information given.
B) No, it would not be unusual.
C) Yes, it would be unusual.

Answer: C
Explanation: A)
B)
C)

37) Which of the following statements about bar graphs is true? 37) _____

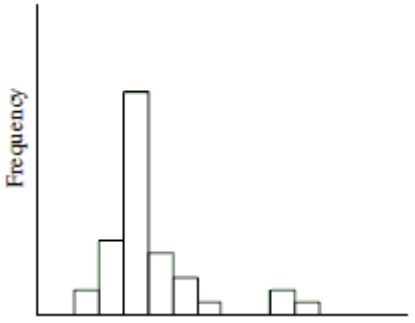
A) It is appropriate to have gaps between the bars on the graph.
B) On a bar graph, the width of the bars has no meaning.
C) It sometimes doesn't matter in which order you place the bars representing different categories.
D) All of these are true for bar graphs.

Answer: D
Explanation: A)
B)
C)
D)

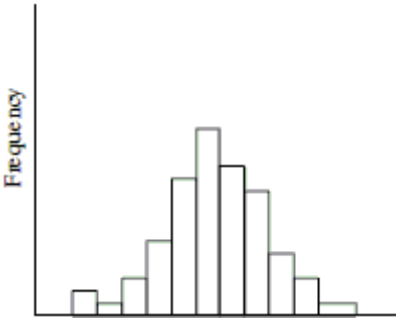
Choose the histogram that matches the description.

38) The distribution of test scores for a group of adults on a written driving exam following a refresher course tends to be left-skewed. 38) _____

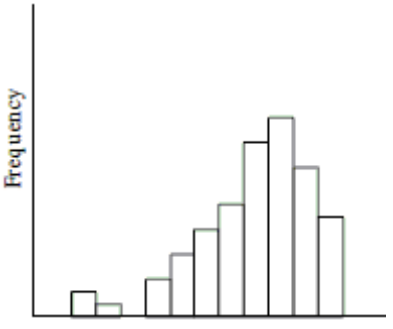
A)



B)



C)



Answer: C

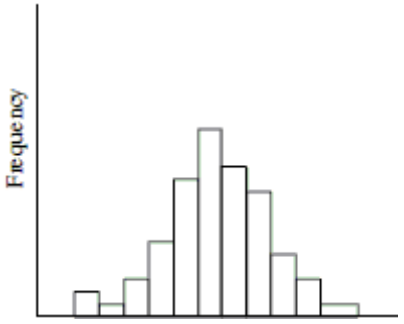
Explanation: A)

B)

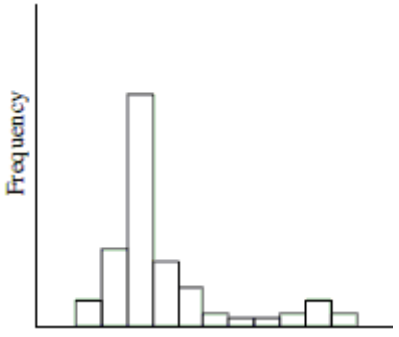
C)

39) The distribution of the numbers of times individuals in the 18-24 age group log onto a social networking website during the course of a day tends to be right-skewed. 39) _____

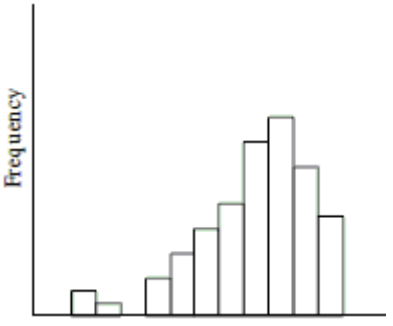
A)



B)



C)



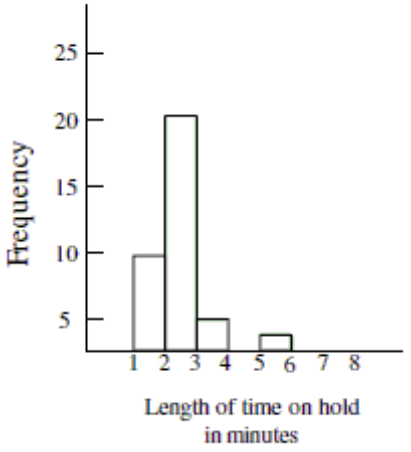
Answer: B

Explanation: A)

B)

C)

40) The histogram below displays the distribution of the length of time on hold, for a collection of customers, calling a repair call center. Use the histogram to select the true statement. 40) _____



A) The distribution shows that the data was highly variable with some callers waiting on hold as many as 20 minutes.
B) The distribution is symmetrical. The number of callers who waited on hold for less than three minutes was the same as the number of callers who waited on hold for more than three minutes.
C) The distribution is left-skewed and most callers waited on hold at least three minutes.
D) The distribution is right-skewed and most callers waited on hold less than three minutes.

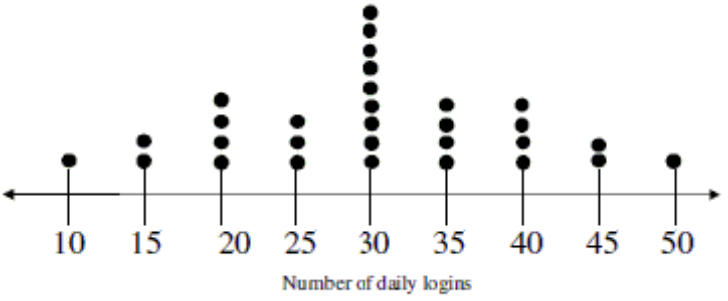
Answer: D
Explanation: A)
B)
C)
D)

SHORT ANSWER. Write the word or phrase that best completes each statement or answers the question.

41) A used car salesman decides to track the number of cars he sold each week for the past twelve months. Typically, the salesman sells 13 cars per week. During an usually slow week he sold only 2 cars, but during his best week he sold 29 cars. Predict the shape of the histogram of the number of cars sold each week. 41) _____

Answer: Answers will vary but should be bounded by a minimum value of 0 cars and a maximum value of 29 cars.
Explanation:

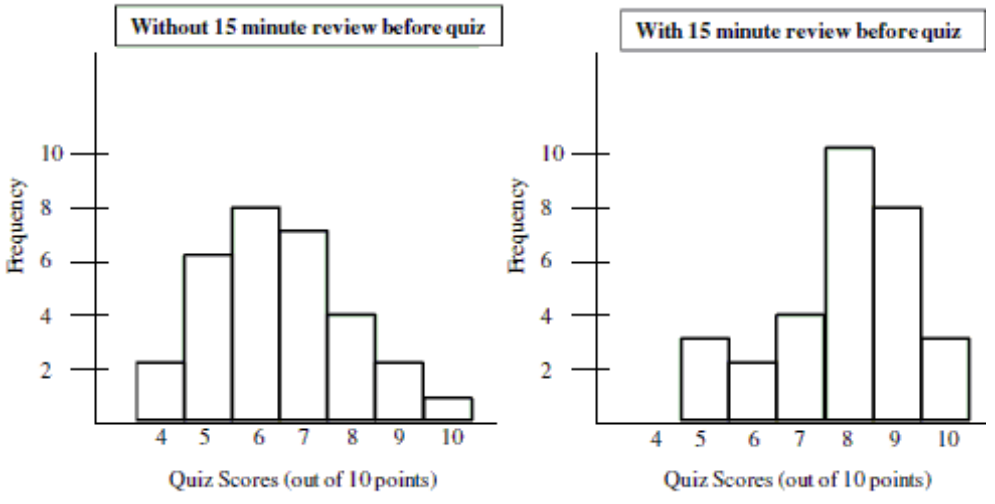
The dotplot shows how many times a computer was used daily at a public library during a 30-day period. Use information from the dotplot to answer the question.



42) The library does not want patrons to wait in line. Usually, a line develops when a computer is used more than 40 times in a day. What percent of days did this occur? Round to the nearest whole percent. 42) _____

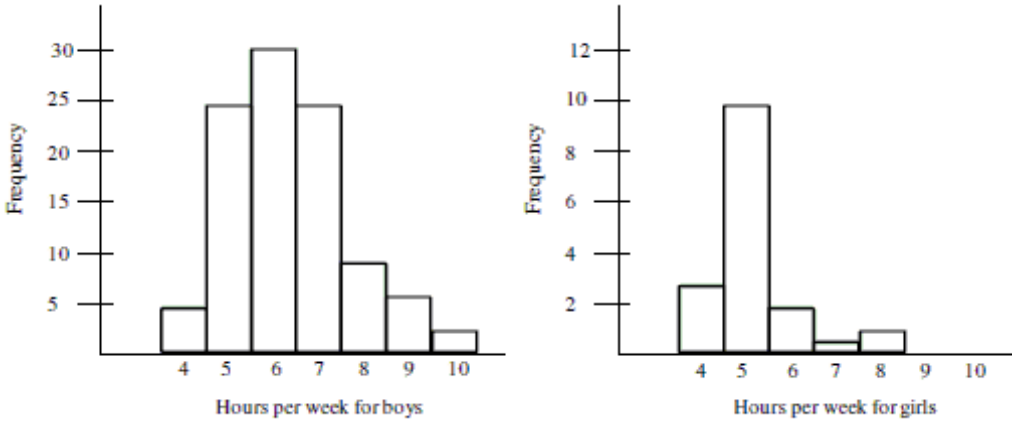
Answer: 23%
Explanation:

43) The histograms below show the distribution of quiz scores on a ten point math quiz with and without a fifteen minute review before the quiz. Describe the different shapes of the distributions. Does it appear that the fifteen minute review resulted in improved quiz scores? Explain the evidence that supports your conclusion. 43) _____



Answer: Without the 15 minute review the distribution of quiz scores is roughly symmetrical with a typical score of 6 out of 10. With the 15 minute review the distribution of quiz scores is left-skewed with a typical score of 8 out of 10. The 15 minute review worked. Without the review roughly 23% scored higher than 8 out of 10, but after the review roughly 70% scored higher than 8 out of 10.
Explanation:

The histograms below show the distribution of the amount of time per week spent outside of school on extracurricular athletic activities for high school boys and high school girls. Use the histograms to answer the question.



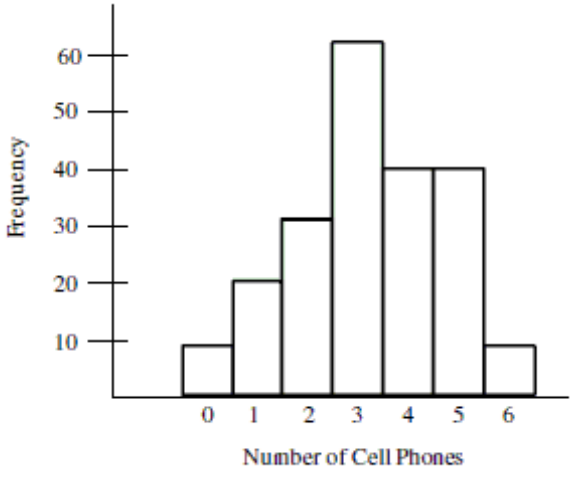
44) Compare and describe the shape of the distributions. 44) _____

Answer: The histograms for both high school boys and girls are roughly right-skewed.
Explanation:

45) About what percent of girls spent 5 hours or less on extracurricular athletic activities each week? Round to the nearest whole percent. 45) _____

Answer: About 75%
Explanation:

Use the histogram below to answer the question. The histogram shows the distribution of the number of cell phones owned by 210 households of five or more people with a minimum age of nine.



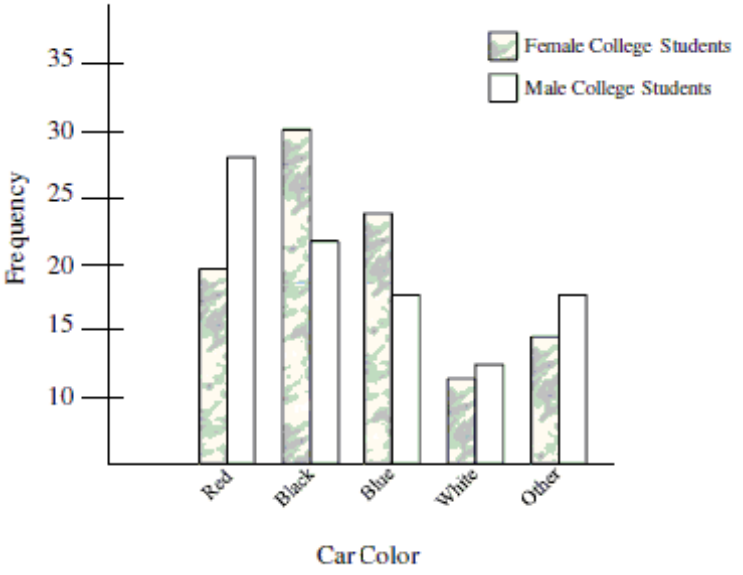
46) According to the histogram, about how many households own four or more cell phones? 46) _____

Answer: About 90 households owned four or more cell phones.
Explanation:

47) Define the important features to look for when presented with a numerical distribution. 47) _____

Answer: The important features to look for are the shape of the distribution, the typical value (or center) of the distribution, and the variability (or horizontal spread) of the distribution.
Explanation:

The bar chart below shows car color for college students at a local community college. Use the bar chart to answer the question.



48) Did one group (males or females) show more variability in car color? 48) _____

Answer: Although the distributions for males and females were different, there does not appear to be a significant difference in variability.

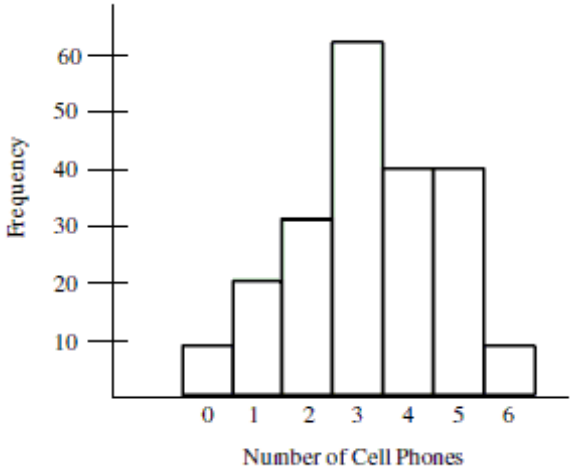
Explanation:

49) Compare and contrast the important similarities and differences between bar charts and histograms. In what context should a bar chart be used? Explain why there are gaps between the bars on a bar chart. In what context should a histogram be used? Explain why there are no gaps between the bars on a histogram. 49) _____

Answer: Bar charts are used to display the distribution of categorical data. Each bar shows the frequency of a category. Since the horizontal axis contains the categories, the bar chart will have gaps between the bars. A histogram is used to display the distribution of numerical data. Each bar shows the frequency of a "bin" or interval of numerical values, so bars must be ordered without gaps.

Explanation:

Use the histogram below to answer the question. The histogram shows the distribution of the number of cell phones owned by 210 households of five or more people with a minimum age of nine.



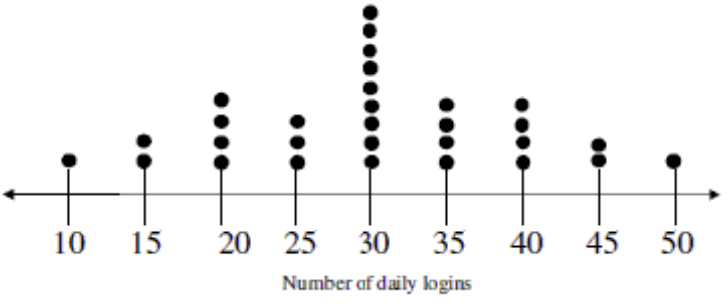
50) According to the histogram, about how many households do not own any cell phones? 50) _____

Answer: About 9 households did not own any cell phones.
Explanation:

51) You have created a histogram showing the distribution of the amount of money spent weekly on video game purchases of 120 males ages 19-25 over the last 6 months. The histogram shows that the typical amount spent by males in this age category is $35. The histogram also shows that one male reported that he spent $250 dollars on video game purchases during one of the weeks. Explain how you would use the histogram to determine whether $250 is an outlier. 51) _____

Answer: Answers will vary, but should address some or all of the following: Does the histogram show small or large variation? Was it skewed to the right? Does this piece of data fit the general pattern or is it far removed from the other data points? This observation warrants more investigation. It could be a recording mistake, but it could also be an accurate (although unusually high) response.
Explanation:

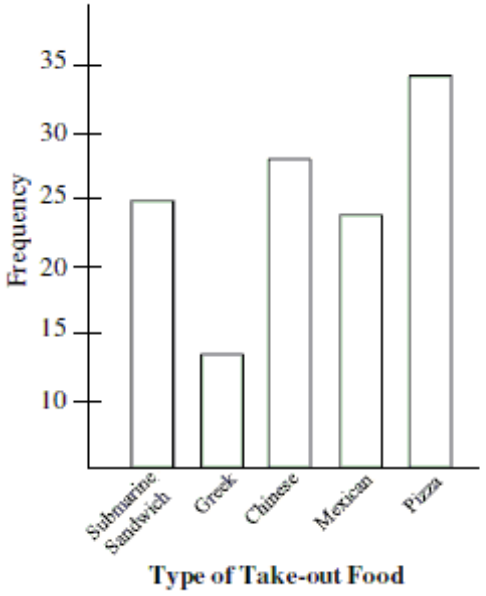
The dotplot shows how many times a computer was used daily at a public library during a 30-day period. Use information from the dotplot to answer the question.

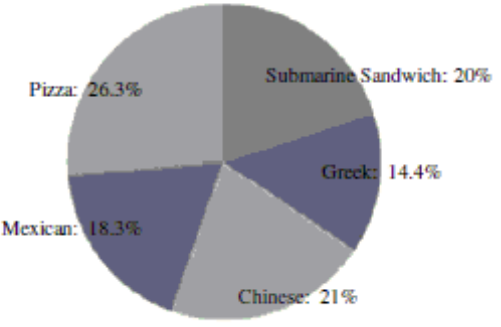


52) Describe the shape of the distribution in context? 52) _____

Answer: The distribution is roughly bell-shaped and centered around 30 daily logins. There was at least 10 daily logins, but never more than 50 daily logins during the 30-day period.
Explanation:

A survey was conducted which asked college students, "What is your favorite type of take-out food?" The results are shown in the graphs below. Use the graphs to answer the question.



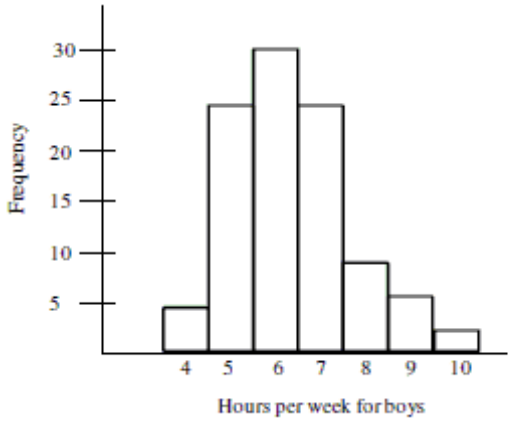


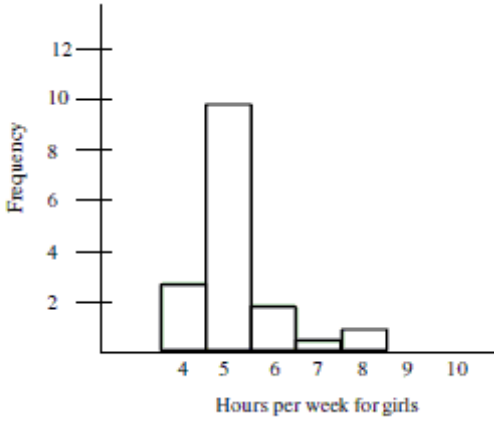
53) Which type of take-out food is least popular? Is this easier to determine with the bar chart or with the pie chart? Why? 53) _____

Answer: Greek take-out was the least popular category. It is easiest to see this on the bar chart.

Explanation:

The histograms below show the distribution of the amount of time per week spent outside of school on extracurricular athletic activities for high school boys and high school girls. Use the histograms to answer the question.



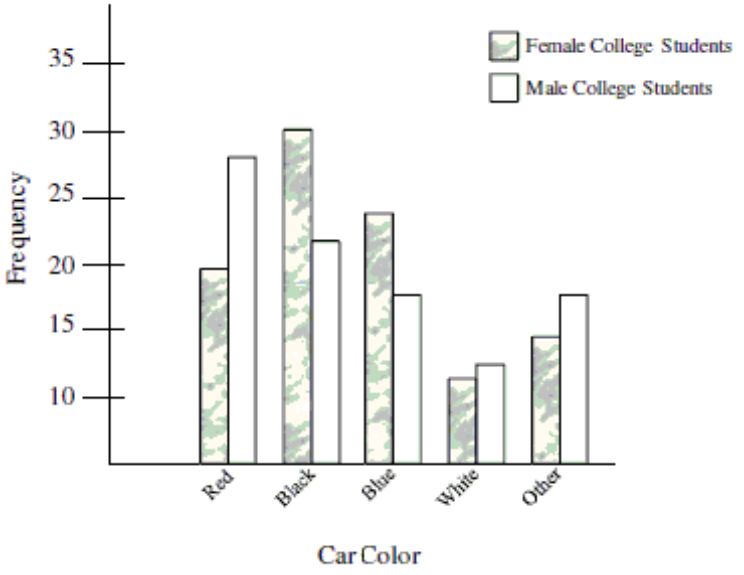


54) Which group is more likely to spend 8 hours or more on extracurricular athletic activities each week? Which group is more likely to spend 6 hours or less on extracurricular athletic activities each week? 54) _____

Answer: Boys; both groups are equally likely to spend 6 hours or less on extracurricular activities each week.

Explanation:

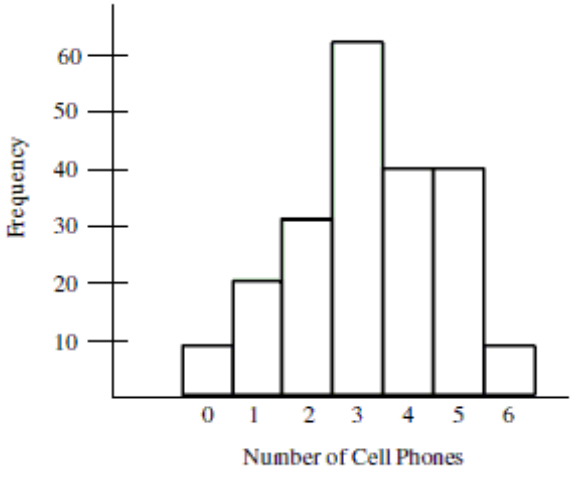
The bar chart below shows car color for college students at a local community college. Use the bar chart to answer the question.



55) Report the mode for males and females. 55) _____

Answer: The mode for females is black, and the mode for males is red.
Explanation:

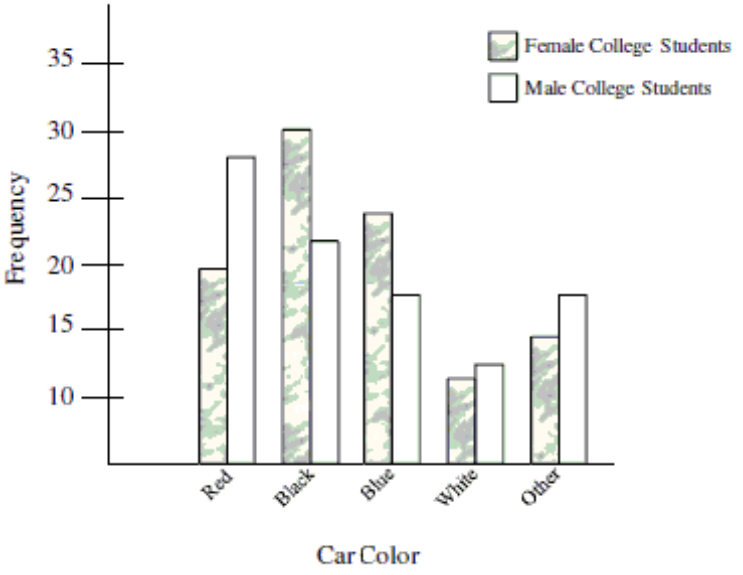
Use the histogram below to answer the question. The histogram shows the distribution of the number of cell phones owned by 210 households of five or more people with a minimum age of nine.



56) About what percentage of households own no more than three cell phones? 56) _____

Answer: About 57% households owned no more than three cell phones.
Explanation:

The bar chart below shows car color for college students at a local community college. Use the bar chart to answer the question.



57) Write a sentence to compare color preferences or males and females. 57) _____

Answer: Answers will vary. One possible response: For both groups, the least popular car color was white.

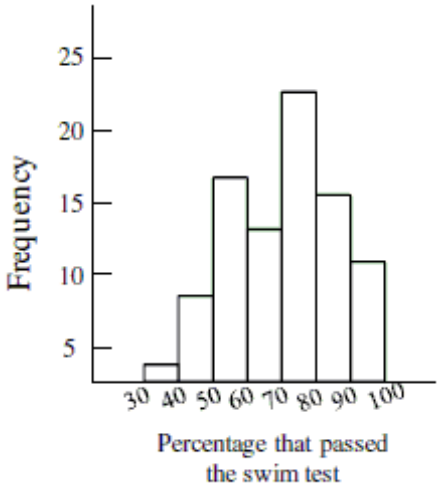
Explanation:

58) Explain how to assess variability when presented with categorical data. 58) _____

Answer: Answers will vary, but should include some explanation about how variability on bar charts can be determined by assessing diversity (are there many observations in many categories).

Explanation:

The histogram below shows the distribution of pass rates on a swimming test of all children who completed a four week summer swim course at the local YMCA. Use the histogram to answer the question.

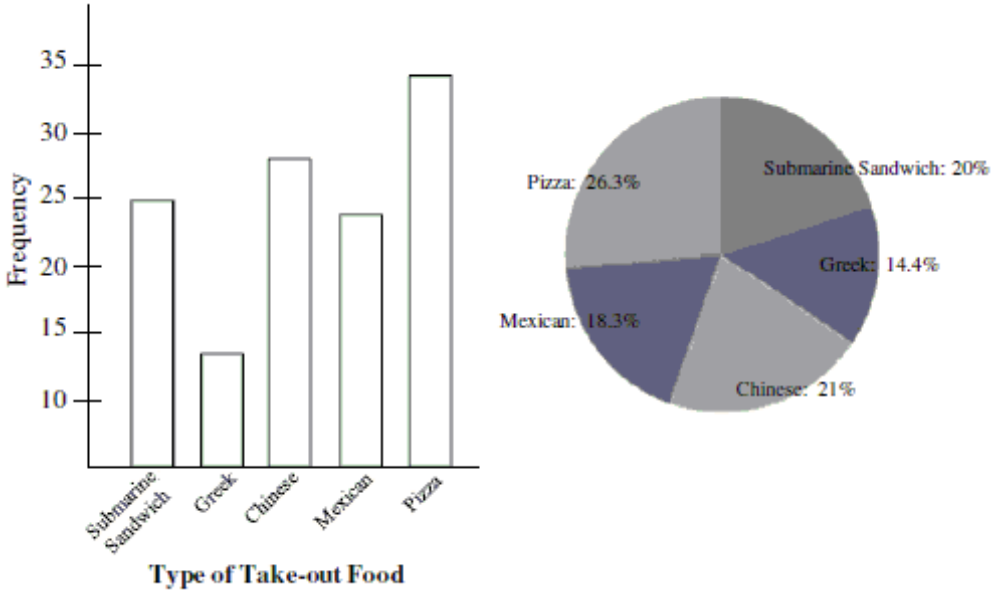


59) About how many of the swim courses had a pass rate of 70% or better? The YMCA managers have set a goal for the summer that at least half the swim courses have a pass rate of at least 70%. Do you think that this YMCA is running a successful summer swim program? Why? 59) _____

Answer: About 50 of the courses had a pass rate of 70% or better. About 56% (approximately 50 out of 89) of the swim courses had a pass rate of 70% or better so the summer swim program has met the goal set by management.

Explanation:

A survey was conducted which asked college students, "What is your favorite type of take-out food?" The results are shown in the graphs below. Use the graphs to answer the question.



60) What percentage of college students preferred either Chinese or pizza? Is this easier to determine with the bar chart or with the pie chart? Why? 60) _____

Answer: The percentage that prefer Chinese or pizza is 47.3%. It is easiest to calculate this using information from the pie chart.

Explanation:

1) C
2) C
3) C
4) B
5) C
6) B
7) A
8) D
9) C
10) C
11) B
12) C
13) C
14) A
15) B
16) D
17) B
18) B
19) B
20) A
21) D
22) C
23) D
24) B
25) D
26) C
27) B
28) B
29) C
30) A
31) C
32) D
33) C
34) D
35) D
36) C
37) D
38) C
39) B
40) D
41) Answers will vary but should be bounded by a minimum value of 0 cars and a maximum value of 29 cars.
42) 23%
43) Without the 15 minute review the distribution of quiz scores is roughly symmetrical with a typical score of 6 out of 10. With the 15 minute review the distribution of quiz scores is left-skewed with a typical score of 8 out of 10. The 15 minute review worked. Without the review roughly 23% scored higher than 8 out of 10, but after the review roughly 70% scored higher than 8 out of 10.
44) The histograms for both high school boys and girls are roughly right-skewed.
45) About 75%
46) About 90 households owned four or more cell phones.

47) The important features to look for are the shape of the distribution, the typical value (or center) of the distribution, and the variability (or horizontal spread) of the distribution.
48) Although the distributions for males and females were different, there does not appear to be a significant difference in variability.
49) Bar charts are used to display the distribution of categorical data. Each bar shows the frequency of a category. Since the horizontal axis contains the categories, the bar chart will have gaps between the bars. A histogram is used to display the distribution of numerical data. Each bar shows the frequency of a "bin" or interval of numerical values, so bars must be ordered without gaps.
50) About 9 households did not own any cell phones.
51) Answers will vary, but should address some or all of the following: Does the histogram show small or large variation? Was it skewed to the right? Does this piece of data fit the general pattern or is it far removed from the other data points? This observation warrants more investigation. It could be a recording mistake, but it could also be an accurate (although unusually high) response.
52) The distribution is roughly bell-shaped and centered around 30 daily logins. There was at least 10 daily logins, but never more than 50 daily logins during the 30-day period.
53) Greek take-out was the least popular category. It is easiest to see this on the bar chart.
54) Boys; both groups are equally likely to spend 6 hours or less on extracurricular activities each week.
55) The mode for females is black, and the mode for males is red.
56) About 57% households owned no more than three cell phones.
57) Answers will vary. One possible response: For both groups, the least popular car color was white.
58) Answers will vary, but should include some explanation about how variability on bar charts can be determined by assessing diversity (are there many observations in many categories).
59) About 50 of the courses had a pass rate of 70% or better. About 56% (approximately 50 out of 89) of the swim courses had a pass rate of 70% or better so the summer swim program has met the goal set by management.
60) The percentage that prefer Chinese or pizza is 47.3%. It is easiest to calculate this using information from the pie chart.