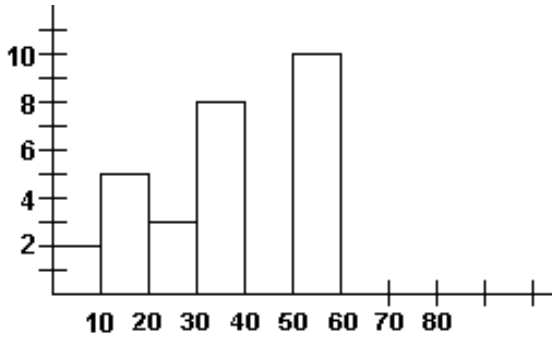


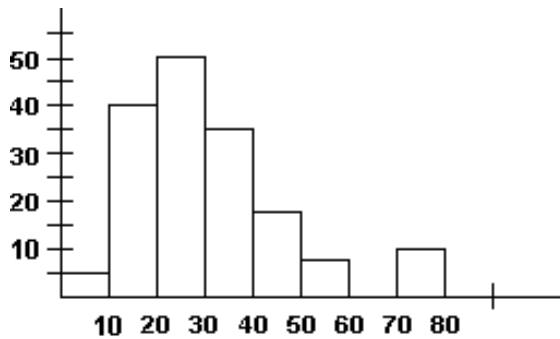
**Choose the most appropriate answer among the choices A), B), C), and D).**

1. Below is a histogram of waiting times for patients at a health clinic. How many patients waited between 20 and 29 minutes?



- A) 2
- B) 3
- C) 6
- D) 8

2. Below is a histogram of the ages of people attending a concert. Which statement is true?



- A) The histogram is roughly symmetric.
- B) There is a gap in the histogram.
- C) The histogram is skewed to the left.
- D) The center of the distribution is at about age 50.

3. Below are the ages of 15 students in a college class. Find the median age.

27, 50, 33, 25, 86, 25, 85, 31, 37, 44, 20, 36, 59, 34, 28

- A) 34
- B) 31
- C) 41.3
- D) 20.6

4. Below are the ages of 15 students in a college class. Find the mean age.

27, 50, 33, 25, 86, 25, 85, 31, 37, 44, 20, 36, 59, 34, 28

- A) 34
- B) 31
- C) 41.3
- D) 20.6

5. Below are the ages of 15 students in a college class. Find the standard deviation of the ages.

27, 50, 33, 25, 86, 25, 85, 31, 37, 44, 20, 36, 59, 34, 28

- A) 26.4
- B) 20.6
- C) 19.9
- D) 4.5

6. Below are the lengths (in minutes) of phone calls made on an 800 line to a business on one day. Find the five-number summary for this data.

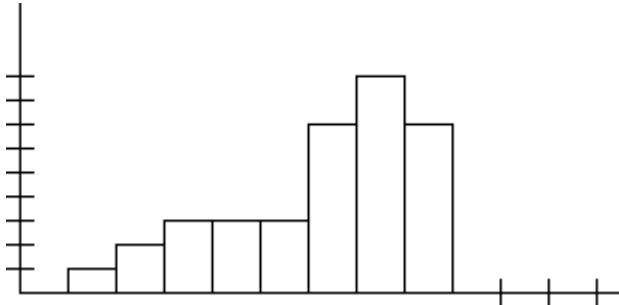
14, 6, 12, 19, 2, 35, 5, 4, 3, 7, 5, 8

- A) 5, 8, 14, 15.5, 20
- B) 2, 4, 7, 14, 35
- C) 2, 4, 6, 12, 19
- D) 2, 4.5, 6.5, 13, 35

7. Which of the following statements about measures of the spread of data is true?

- A) Neither the quartiles nor the standard deviation is strongly affected by an outlier in the data.
- B) The quartiles are strongly affected by an outlier in the data but the standard deviation is not.
- C) The standard deviation is strongly affected by an outlier in the data but the quartiles are not.
- D) Both the quartiles and the standard deviation are strongly affected by an outlier in the data.

8. Given the histogram below for a set of data, which statement is true?



- A) For the set of data shown, the mean and the median are about equal.  
B) For the set of data shown, the mean is greater than the median.  
C) For the set of data shown, the median is greater than the mean.  
D) For the set of data shown, the relationship between the mean and the median cannot be determined.
9. A spinner numbered 1 through 10 is spun and one die is rolled simultaneously. The sum of the number spun and the number rolled is recorded. How many outcomes are in the sample space?  
A) 60  
B) 16  
C) 15  
D) 10
10. Two fair dice are rolled and the sum rolled is recorded. Find the probability that the sum is 4.  
A)  $\frac{1}{3}$   
B)  $\frac{1}{12}$   
C)  $\frac{4}{11}$   
D)  $\frac{1}{9}$
11. We need to create serial numbers that start with one of the letters a, b, c, d, or f, followed by three non-repeating digits. How many serial numbers can be created?  
A) 5000  
B) 2520  
C) 725  
D) 3600

12. A sample space contains three outcomes, A, B, and C. Which of the following could be a legitimate assignment of probabilities to the outcomes?
- A)  $P(A) = 0.2$       $P(B) = 0.4$       $P(C) = 0.6$
  - B)  $P(A) = 0.2$       $P(B) = 0.2$       $P(C) = 0.6$
  - C)  $P(A) = 2$           $P(B) = 3$           $P(C) = 1$
  - D)  $P(A) = 0.3$       $P(B) = 0.3$       $P(C) = 0.3$
13. A raffle ticket costs \$5. First and second prize winners will be drawn at random. The probability of winning the \$100 first prize is  $1/40$  and the probability of winning the \$25 second prize is  $1/20$ . What is the mean winnings for one play, taking into account the \$5 cost of the ticket?
- A)  $-1.25$
  - B)  $-0.875$
  - C)  $3.375$
  - D)  $3.75$
14. The scores of students on a standardized test are normally distributed with a mean of 300 and a standard deviation of 40. Between what two values do 99.7% of the test scores lie?
- A) 260 to 340
  - B) 220 to 380
  - C) 297 to 303
  - D) 180 to 420
15. The length of students' college careers at Anytown University is known to be normally distributed, with a mean length of 5.5 years and a standard deviation of 1.75 years. What percent of students have college careers lasting between 2 and 9 years?
- A) 50%
  - B) 99.75%
  - C) 68%
  - D) 95%
16. A poll of 60 students found that 20% were in favor of raising parking fees to pave two new parking lots. The standard deviation of this poll is about 5.2%. What would be the standard deviation if the sample size was increased from 60 students to 120 students?
- A) 10.4%
  - B) 7.3%
  - C) 2.6%
  - D) 3.68%

## **Answer Key**

1. B
2. B
3. A
4. C
5. B
6. D
7. C
8. C
9. C
10. B
11. D
12. B
13. B
14. D
15. D
16. D