

*You should complete all of the problems before going to Blackboard to enter your answers.*

1) Which of the following is a quantitative variable?

- A) Price of a car in thousands of dollars
- C) The make of a washing machine

- B) A person's gender
- D) Whether a person is a college graduate or not

2) The width of each bar in a histogram corresponds to the:

- A) number of observations in the class.
- C) boundaries of the class.

- B) percentage of observations in the class.
- D) midpoint of the class.

3) For a data set with 10 numerical values arranged in an ascending order, the median is the average of the:

- A) fifth and sixth values.
- C) third and fourth values.

- B) fourth and fifth values.
- D) first and tenth values.

4) Which of the following is NOT affected by extreme values (outliers) in the data?

- A) Mean
- C) Standard deviation

- B) Range
- D) Median

- 5) A large retail company gives an employment screening test to all prospective employees. Geddy Lee recently took the test and it was reported back to him that his score placed him at the 80th percentile. Therefore:
- A) Geddy scored as high or higher than 80 percent of the people who took the test.
  - B) Geddy's score has a z-score of 80.
  - C) 80 people who took the test scored below Geddy.
  - D) Geddy was in the bottom 20 percent of those that have taken the test.

6) Which of the following is true:

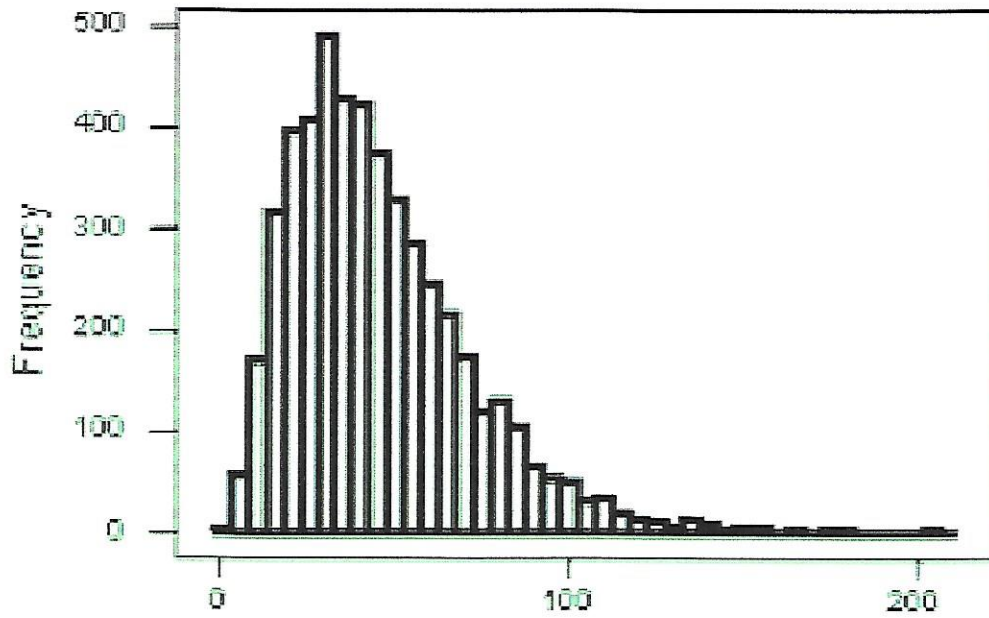
- A) The mode applies only to quantitative data.
- B) A parameter is a numerical measure computed from the population.
- C) A histogram will have gaps between each bar while a bar graph will not.
- D) The 50th percentile, 2nd quartile, and the median are not all the same value.

7) Suppose you have a data set that contains 100 integer values with a minimum of 54 and a maximum of 112. You have decided that there should be 8 classes. Determine the limits of the first two classes by starting the first class with the minimum value.

- |   |   |
|---|---|
| A) 54 - 60 or 54 to < 61<br>61 - 67 or 61 to < 68 | B) 54 - 63 or 54 to < 64<br>64 - 73 or 64 to < 74 |
| C) 54 - 62 or 54 to < 63<br>63 - 71 or 63 to < 72 | D) 54 - 61 or 54 to < 62<br>62 - 69 or 62 to < 70 |

A graphical display of a data set is given. Identify the overall shape of the distribution as (roughly) symmetric (non-uniform), uniform, right skewed, or left skewed.

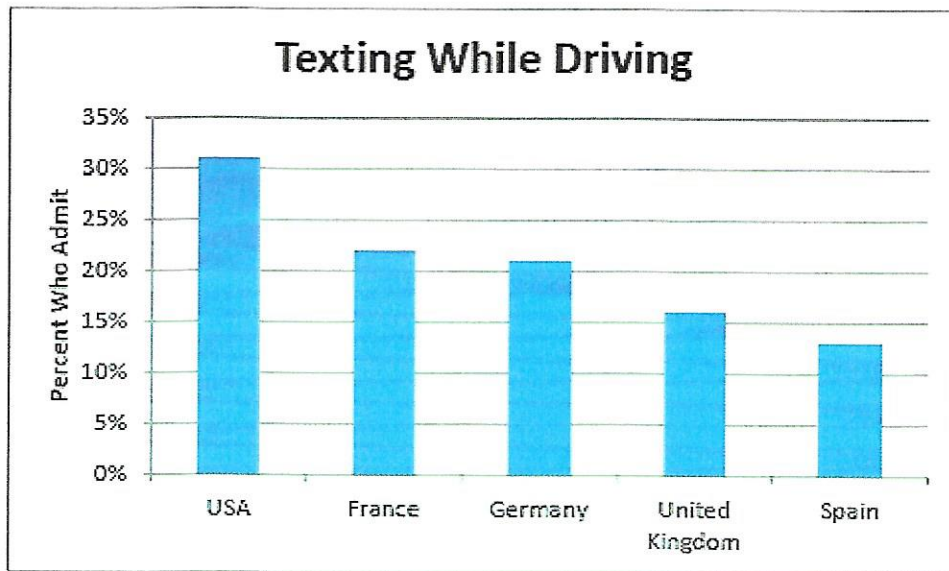
8)



- A) Right skewed
- C) Left skewed

- B) Symmetric (non-uniform)
- D) Uniform

9) The following chart shows the percentage of adults from various countries who admitted to texting while driving in a recent survey.

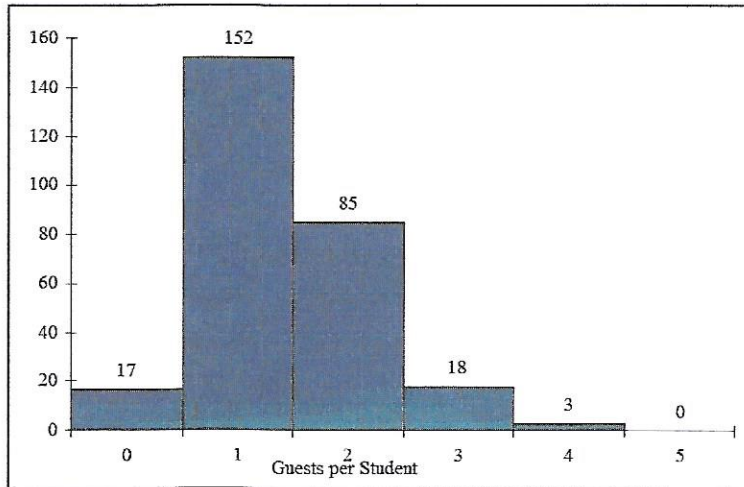


Which of the following statements is **NOT** correct?

- A) Spain has the lowest percentage of adults who admitted to texting while driving.
- B) The USA has the highest percentage of adults who admitted to texting while driving.
- C) The United Kingdom has a lower percentage of adults who admit to texting while driving when compared to France.
- D) The United Kingdom has a higher percentage of adults who admit to texting while driving when compared to Germany.

TABLE 2-3

Every spring semester, the School of Business coordinates a luncheon with local business leaders for graduating seniors, their families, and friends. Corporate sponsorship pays for the lunches of each of the seniors, but students have to purchase tickets to cover the cost of lunches served to guests they bring with them. The following histogram represents the attendance at the senior luncheon, where  $X$  is the number of guests each graduating senior invited to the luncheon and  $f$  is the number of graduating seniors in each category.

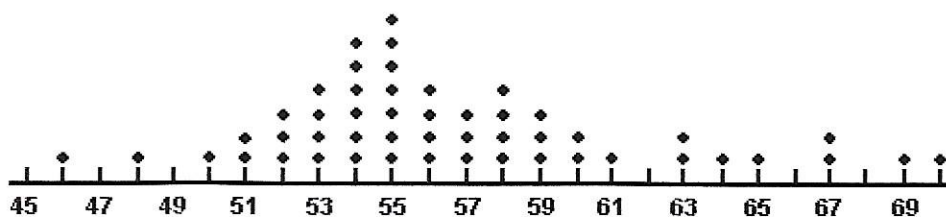


10) Referring to the histogram from Table 2-3, how many graduating seniors attended the luncheon with less than two guests?

- A) 254                      B) 275                      C) 152                      D) 169

**Solve the problem.**

- 11) A sample of 50 motorists was taken on a Federal highway where the speed limit was 55 miles per hour. Any speed over 55 is considered speeding. A dot plot of their speeds is shown below.



What percent of the motorists were speeding?

- A) 44%                                      B) 40%                                      C) 50%                                      D) 56%
- 12) The heights of the adults in one town have a mean of 67.1 inches and a standard deviation of 3.4 inches. What can you conclude from Chebyshev's theorem about the percentage of adults in the town whose heights are between 60.3 and 73.9 inches?

- A) The percentage is at least 75%                                      B) The percentage is at most 75%.  
C) The percentage is at least 88.9%                                      D) The percentage is at most 88.9%

**Find the mean for the given sample data. Round your answer to one decimal place.**

- 13) Last year, nine employees of an electronics company retired. Their ages at retirement are listed below. Find the mean retirement age.

55 68 60  
56 67 58  
61 57 57

- A) 59.9                                      B) 58.0                                      C) 58.6                                      D) 59.2

Find the sample variance  $s^2$  for the given data. Round your final answer to two decimal places.

14) 2, 5, 10, 7, 8

A) 9.30

B) 3.05

C) 7.44

D) 2.73

Solve the problem.

15) A small computing center has found that the number of jobs submitted per day to its computers has a distribution that is approximately bell-shaped and symmetric, with a mean of 94 jobs and a standard deviation of 7. Where do we expect most (approximately 95%) of the distribution to fall?

A) between 73 and 115 jobs per day

B) between 87 and 101 jobs per day

C) between 80 and 108 jobs per day

D) between 108 and 115 jobs per day

Find the mode(s) for the given sample data.

16) The blood types for 30 people who agreed to participate in a medical study were as follows.

O A A O A AB O B A O  
A O A B O O O AB A A  
A B O A A O O B O O

Find the mode of the blood types.

A) O, A

B) A

C) AB

D) O

Provide an appropriate response.

17) For the stem-and-leaf plot below, find the range of the data set.

Key:  $2|7 = 27$

```
1 | 3 5
2 | 6 6 6 7 8 9
2 | 7 7 7 8 8 9 9 9
3 | 0 1 1 2 3 4 4 5
3 | 6 6 6 7 8 8 9
4 | 0 3
```

A) 43

B) 30

C) 36

D) 13

Determine which score corresponds to the higher relative position.

18) Which is better, a score of 90 on a test with a mean of 60 and a standard deviation of 20, or a score of 680 on a test with a mean of 500 and a standard deviation of 100?

A) A score of 90

B) Both scores have the same relative position.

C) A score of 680

Find the median for the given sample data.

19) The salaries of ten randomly selected doctors are shown below.

\$126,000	\$112,000	\$172,000	\$231,000	\$208,000
\$135,000	\$145,000	\$794,000	\$244,000	\$180,000

Find the median salary.

A) \$176,000

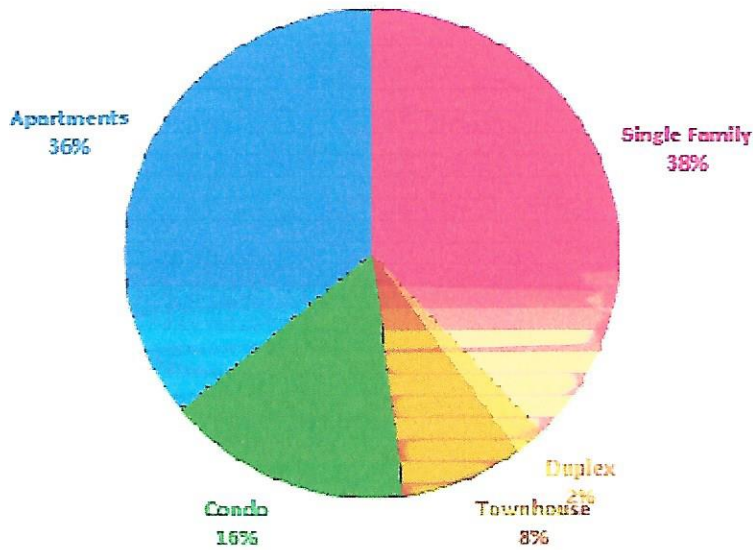
B) \$261,000

C) \$235,000

D) \$172,000

20) The pie graph shows the percent of the total population of 22,000 of Springfield living in the given types of housing. Round your result to the nearest whole number.

**TYPES OF HOUSING**



Find the number of people who live in townhouses.

- A) 1760 people                      B) 20,240 people                      C) 660 people                      D) 8 people

**Solve the problem.**

21) The cholesterol levels (in milligrams per deciliter) of 30 adults are listed below. Find the interquartile range  $Q_3 - Q_1$  for the cholesterol level of the 30 adults.

154 156 165 165 170 171 172 180 184 185  
 189 189 190 192 195 198 198 200 200 200  
 205 205 211 215 220 220 225 238 255 265

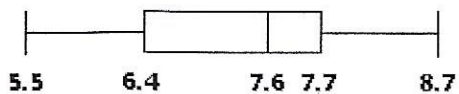
- A) 111                                      B) 30                                      C) 37                                      D) 31

Construct a boxplot for the given data. Include values of the 5-number summary in all boxplots.

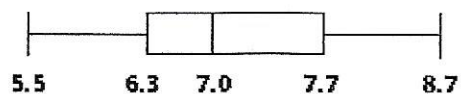
22) The weights (in pounds) of 30 newborn babies are listed below. Construct a boxplot for the data set.

5.5 5.7 5.8 5.9 6.1 6.1 6.3 6.4 6.5 6.6  
6.7 6.7 6.7 6.9 7.0 7.0 7.0 7.1 7.2 7.2  
7.4 7.5 7.7 7.7 7.8 8.0 8.1 8.1 8.3 8.7

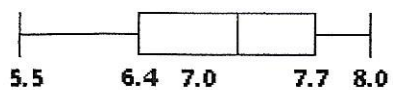
A)



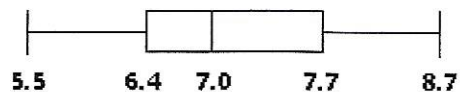
B)



C)



D)



Construct the requested frequency distribution table. Use classes based on a single value.

23) A car insurance company conducted a survey to find out how many car accidents people had been involved in. They selected a sample of 32 adults between the ages of 30 and 70 and asked each person how many accidents they had been involved in the past ten years. The following data were obtained.

0 1 0 3 2 1 0 2  
 1 1 1 0 2 0 4 1  
 2 0 0 1 0 2 1 3  
 1 3 0 0 1 0 5 4

Construct a frequency distribution table for the number of car accidents.

A)

Number of accidents	Frequency
0	12
1	9
2	5
3	3
4	2
5	1

B)

Number of accidents	Frequency
0	11
1	10
2	5
3	3
4	1
5	1

C)

Number of accidents	Frequency
1	10
2	5
3	3
4	2
5	1

D)

Number of accidents	Frequency
0	11
1	10
2	5
3	3
4	2
5	1

TABLE 2-5

The following are the duration in minutes of a sample of long-distance phone calls made within the continental United States reported by one long-distance carrier.

<u>Time (in Minutes)</u>	<u>Relative Frequency</u>
0 but less than 5	0.37
5 but less than 10	0.22
10 but less than 15	0.15
15 but less than 20	0.10
20 but less than 25	0.07
25 but less than 30	0.07
30 or more	0.02

24) Referring to Table 2-5, what is the cumulative relative frequency for the percentage of calls that lasted less than 20 minutes?

A) 0.16

B) 0.10

C) 0.47

D) 0.84

**Provide an appropriate response.**

25) A student receives test scores of 62, 83, and 91. The student's final exam score is 88 and homework score is 76. Each test is worth 20% of the final grade, the final exam is 25% of the final grade, and the homework grade is 15% of the final grade. What is the student's mean score in the class?

A) 76.6

B) 85.6

C) 80.6

D) 90.6