

On my honor, by printing and signing my name below, I vow to neither receive nor given any unauthorized assistance on this examination:

Name _____ Signature _____

*** **

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

- 1) Determine whether the given value is a discrete or continuous variable. People are asked to state how many times in the last month they visited their family doctor. 1) _____
A) Continuous B) Discrete
- 2) Determine which of the four levels of measurement is most appropriate. Students' grades, A, B, or C, on a test. 2) _____
A) Interval B) Ratio C) Nominal D) Ordinal
- 3) A tax auditor selects every 1000th income tax return that is received. Identify which of these types of sampling is used. 3) _____
A) Cluster
B) Systematic
C) Convenience
D) Stratified
E) Simple Random
- 4) Determine whether the given value is a statistic or a parameter. Thirty percent of all dog owners poop scoop after their dog. 4) _____
A) Statistic B) Parameter
- 5) Determine whether the given value is from a discrete or continuous data set. The time it takes a computer to complete a task. 5) _____
A) Continuous B) Discrete
- 6) On a test, 74% of the questions are answered correctly. If 111 questions are correct, how many questions are on the test? 6) _____
A) 67 questions B) 82 questions C) 37 questions D) 150 questions
- 7) Correlation does not imply _____. 7) _____
A) causation B) linearity C) significance D) bias
- 8) There are many potential pitfalls that can cause problems when analyzing data. Which of these choices are not classified as a potential pitfall? 8) _____
A) Self-reported data B) Order of survey questions
C) Measured data D) Nonresponse

9) A _____ is the complete collection of all measurements or data collected, whereas, a _____ is a subcollection of members selected from the complete collection.

9) _____

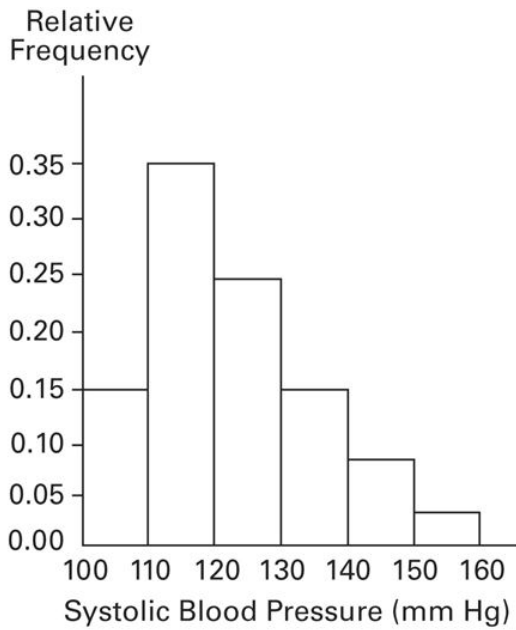
- A) population; sample
- C) sample; population

- B) sample; census
- D) population; parameter

10) A nurse measured the blood pressure of each person who visited her clinic. Following is a relative-frequency histogram for the systolic blood pressure readings for those people aged between 25 and 40 years. The blood pressure readings were given to the nearest whole number. Approximately what percentage of the people aged 25–40 had a systolic blood pressure reading between 110 and 119 mm Hg inclusive?

10) _____

Systolic Blood Pressure for People Aged 25–40 Years



A) 35%

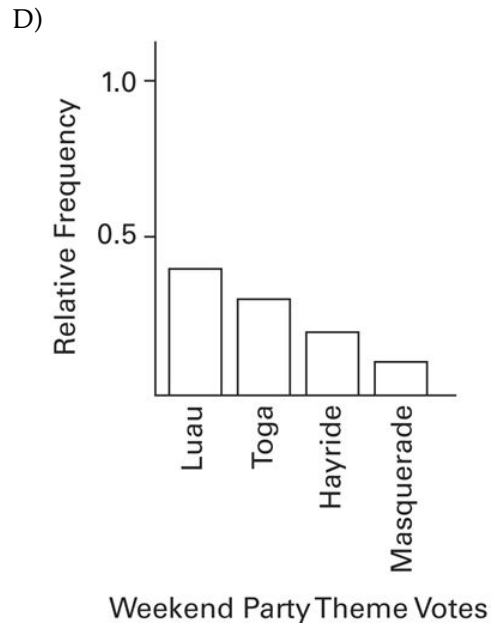
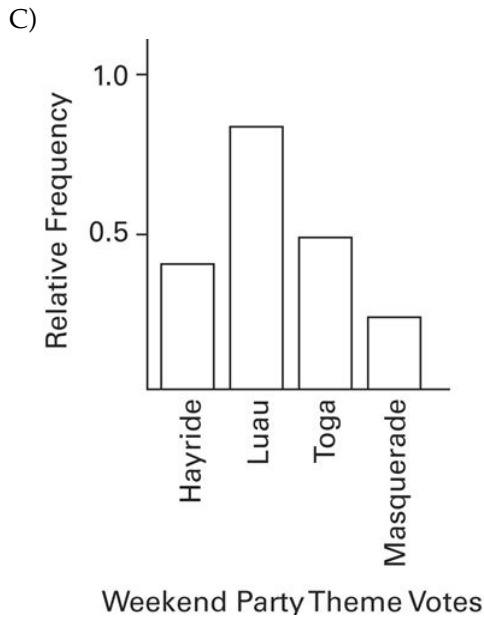
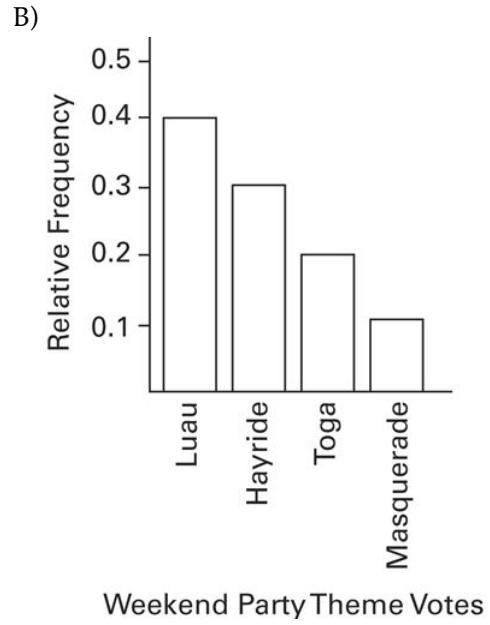
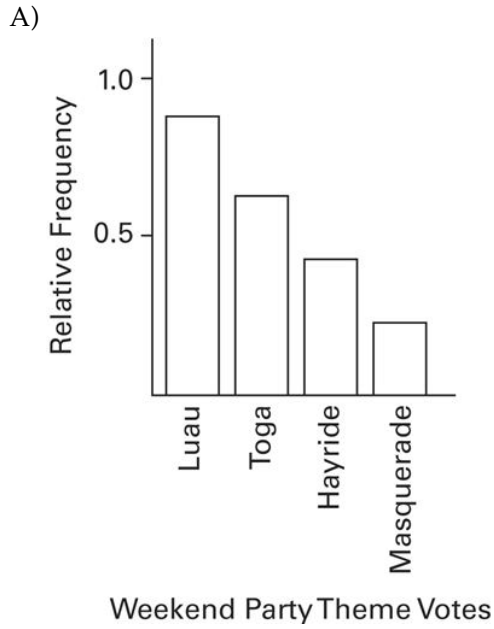
B) 30%

C) 3.5%

D) 0.35%

11) The Kappa Iota Sigma Fraternity polled its members on the weekend party theme. The vote was as follows: six for toga, four for hayride, eight for luau, and two for masquerade. Display the vote count in a Pareto chart.

11) _____



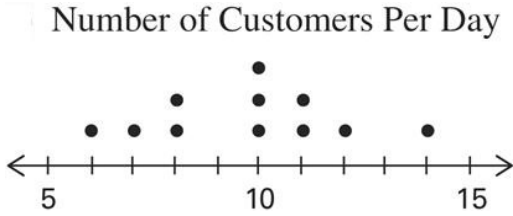
12) A store manager counts the number of customers who make a purchase in his store each day.
The data are as follows.

12) _____

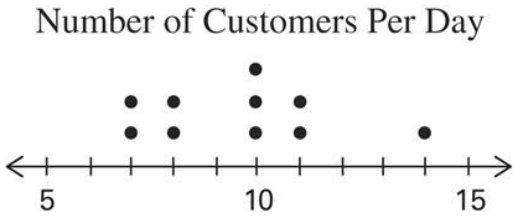
10 11 8 14 7 10 10 11 8 7

Which of these choices display the correct dotplot?

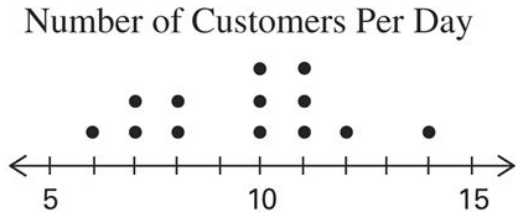
A)



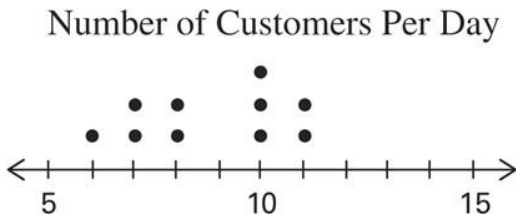
B)



C)



D)



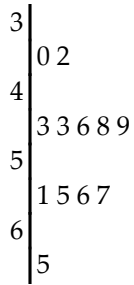
13) The following data show the number of laps run by each participant in a marathon.

13) _____

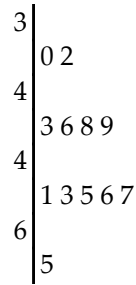
46 65 55 43 51 48 57 30 43 49 32 56

Which of these choices display the correct stemplot?

A)



B)



14) The following frequency distribution represents the scores on a math test. Find the class midpoint of scores for the interval 40-59.

14) _____

Scores	Number of students
50-59	2
60-69	4
70-79	6
80-89	15
90-99	5

A) 50.5

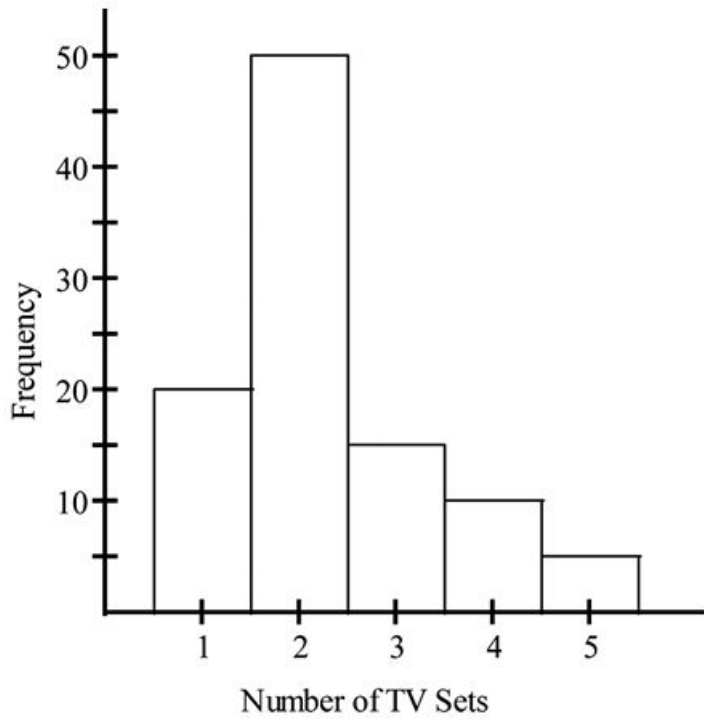
B) 49.0

C) 48.5

D) 49.5

15) The histogram below represents the number of television sets per household for a sample of U.S. households. What is the sample size? 15) _____

Number of Television Sets Per U.S. Household



- A) 5 households
- C) 100 households

- B) 50 households
- D) 90 households

16) Which of the following cumulative frequency distribution corresponds to the given frequency distribution?

16) _____

Weight (oz)	Number of Stones
1.2-1.6	5
1.7-2.1	2
2.2-2.6	5
2.7-3.1	5
3.2-3.6	13

A)

Weight (oz)	Cumulative Frequency
Less than 2.2	7
Less than 3.2	17
Less than 3.7	30

B)

Weight (oz)	Cumulative Frequency
1.2-1.6	5
1.7-2.1	7
2.2-2.6	12
2.7-3.1	17
3.2-3.6	30

C)

Weight (oz)	Cumulative Frequency
Less than 1.7	5
Less than 2.2	7
Less than 2.7	12
Less than 3.2	17
Less than 3.7	28

D)

Weight (oz)	Cumulative Frequency
Less than 1.7	5
Less than 2.2	7
Less than 2.7	12
Less than 3.2	17
Less than 3.7	30

Provide an appropriate response.

17) The following frequency distribution analyzes the scores on a math test. Find the class boundaries of scores interval 40-59.

17) _____

Scores	Number of students
40-59	2
60-75	4
76-82	6
83-94	15
95-99	5

A) 39.5, 58.5

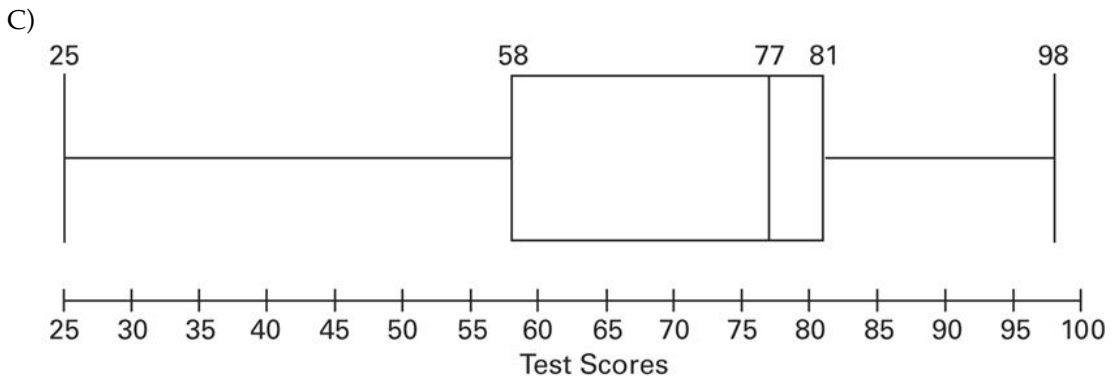
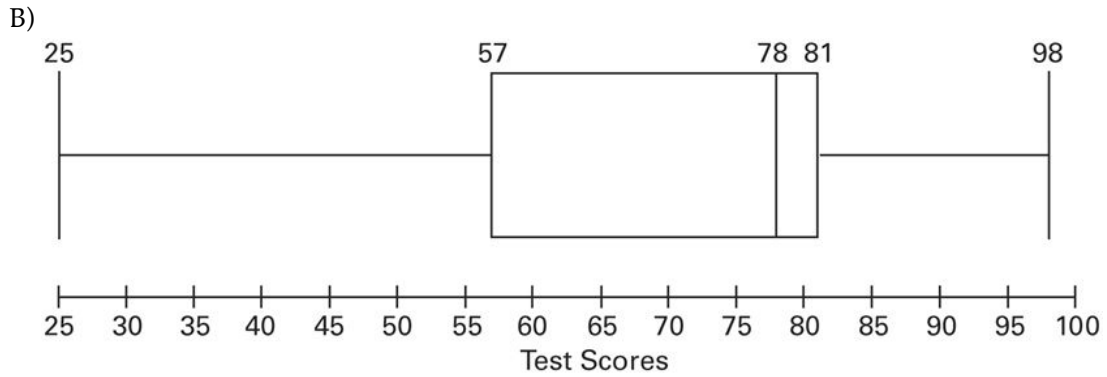
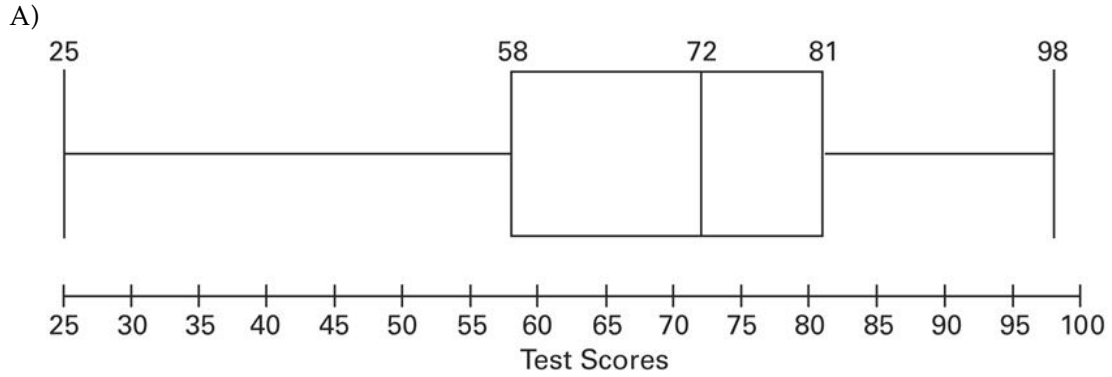
B) 40.5, 58.5

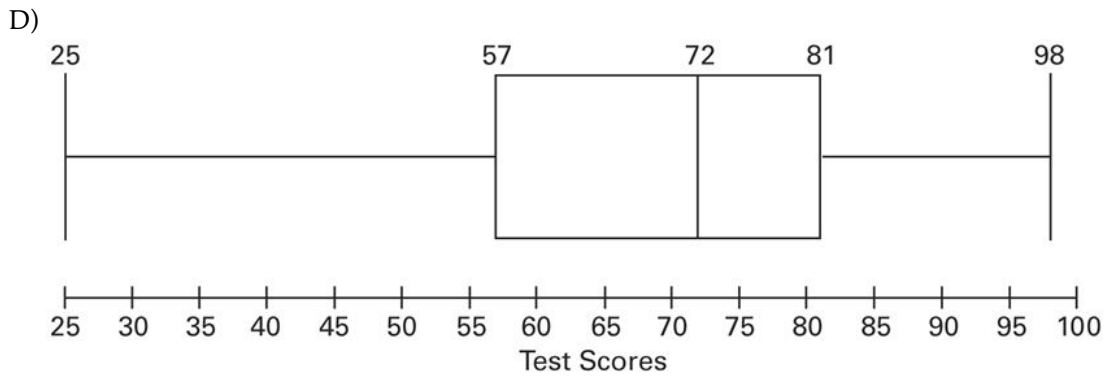
C) 40.5, 59.5

D) 39.5, 59.5

18) Construct a boxplot for the given data. Include values of the 5-number summary in all boxplots. 18) _____
 The test scores of 40 students are listed below.

25 35 43 44 47 48 54 55 56 57
 59 62 63 65 66 68 69 69 71 72
 72 73 74 76 77 77 78 79 80 81
 81 82 83 85 89 92 93 94 97 98





19) The test scores of 40 students are listed below. Find P_{56} . 19) _____

30 35 43 44 47 48 54 55 56 57
 59 62 63 65 66 68 69 69 71 72
 72 73 74 76 77 77 78 79 80 81
 81 82 83 85 89 92 93 94 97 98

A) 74 B) 73.5 C) 73 D) 22.4

20) If the standard deviation for a set of data is 0, which of the following must be true? 20) _____

- A) All of the data values are identical.
- B) All of the data values are negative.
- C) All the data values equal 0.
- D) None of the above must be true since standard deviation cannot be equal to 0.

21) A student earned grades of B, B, A, C, and D. Those courses had these corresponding numbers of credit hours: 4, 5, 1, 5, 4. The grading system assigns quality points to letter grades as follows: A = 4, B = 3, C = 2, D = 1, and F = 0. Compute the grade point average (GPA) and round the result to two decimal places. 21) _____

A) 3.46 B) 1.37 C) 9.00 D) 2.37

22) Human body temperatures have a mean of 98.20°F and a standard deviation of 0.62°F . Sally's temperature can be described by $z = -1.5$. What is her temperature? Round your answer to the nearest hundredth. 22) _____

A) 95.79°F B) 96.70°F C) 99.13°F D) 97.27°F

23) Listed below are the amounts of time (in months) that the employees of a restaurant have been working at the restaurant. Find the mean for the given sample data. Round your answer to one more decimal place than the original data values. 23) _____

1 5 6 8 11 14 17 46 61 90 99 126 143 167

A) 52.9 months B) 61.1 months C) 31.5 months D) 56.7 months

- 24) The number of vehicles passing through a bank drive-up line during each 15-minute period was recorded. The results are shown below. Find the median number of vehicles going through the line in a 15-minute period. 24) _____

25 27 25 28
28 25 30 27
35 31 31 29
24 31 25 20
15 27 27 27

- A) 31 vehicles B) 28 vehicles C) 27 vehicles D) 26.85 vehicles

- 25) The prices (in dollars) of 12 electric smooth top ranges are listed below. Find the range for the given sample data. 25) _____

865 1010 655 565 1465 1110
710 765 820 1310 555 1065

- A) \$930 B) \$900 C) \$920 D) \$910

- 26) Scores on the SAT test have a mean of 1518 and a standard deviation of 325. Scores on the ACT test have a mean of 21.1 and a standard deviation of 4.8. Which of the following choices is not true? 26) _____

- A) The SAT score of 1490 is relatively better than the ACT score of 17.0.
B) An SAT score of 1490 has a z score of -0.09 .
C) The ACT score of 17.0 is relatively better than the SAT score of 1490.
D) An ACT score of 17.0 has a z score of -0.85 .

- 27) Find the standard deviation for the given sample data. Round your answer to one more decimal place than is present in the original data. 27) _____

22.6 16.1 36.1 36.0 23.8 20.3

- A) 8.35 B) 3999.0 C) 36.1 D) 4347.7

- 28) When finding percentiles, if the locator L is not a whole number, one procedure is to interpolate so that a locator of 23.75, for example, leads to a value that is $3/4$ of the way between the 23rd and 24th scores. Use this method of interpolation to find P_{75} for the set of test scores below. 28) _____

51 54 64 68 72 74
76 83 94 94 99

- A) 83 B) 85.75 C) 94 D) 88.5

- 29) If your score on your next statistics test is converted to a z score, which of these z scores would you prefer? 29) _____

- A) -2.00 B) 0 C) -1.00 D) 2.00

ESSAY. Write your answer in the space provided or on a separate sheet of paper.

- 30) Use the following duration times (seconds) of 24 eruptions of the Old Faithful geyser in Yellowstone National Park. The duration times are sorted from lowest to highest.

110 120 178 213 234 234 235 237 240 243 245 245
250 250 251 252 254 255 255 259 260 266 269 273

Construct a boxplot and make observations about the shape, if there is skewness including in what direction, and if there are any outliers. Explain the skewness in terms of the difference between Q_1 and the median and Q_3 and the median.

Answer Key

Testname: STAT50_SAMPLE_EXAM_1-S19

- 1) B
- 2) D
- 3) B
- 4) B
- 5) A
- 6) D
- 7) A
- 8) C
- 9) A
- 10) A
- 11) D
- 12) B
- 13) A
- 14) D
- 15) C
- 16) D
- 17) D
- 18) A
- 19) A
- 20) A
- 21) D
- 22) D
- 23) D
- 24) C
- 25) D
- 26) C
- 27) A
- 28) B
- 29) D

Answer Key

Testname: STAT50_SAMPLE_EXAM_1-S19

- 30) The boxplot shows skewness to the left, with 3 outliers identified in Minitab, all strung out to the left. The difference between Q_1 and the median is much larger than the Q_3 and the median which supports the left skew.

