

Name: _____ Date: _____

1. The four technology tools presented in this text are the TI-84 Plus C calculator, Excel 2013, Minitab, and
 - A) SPSS.
 - B) CrunchIt.
 - C) JMP.
 - D) R.

2. Which of the following is a good estimate of the probability of lung cancer for a typical American adult?
 - A) the incidence of lung cancer among U.S. adults
 - B) the average number of U.S. adults who died from lung cancer in 2013
 - C) the relative frequency of lung cancer among U.S. adults
 - D) All of the above

3. The registrar at a small liberal arts college computes description summaries for all members of the entering class on a regular basis. For example, the average high school GPA for the entering students in the most recent year was 3.16. The Chemistry department is interested in helping all students who wish to take a chemistry class identify the appropriate course, so they offer a placement exam. They randomly select a subset of 175 students who took this exam during the past decade, and found they had an average score on the exam of 71.05. The **variable** of interest to the Chemistry department in this study is the:
 - A) 175 selected students who took this exam during the past decade.
 - B) students' scores on the placement exam
 - C) average score on the placement exam.
 - D) GPA of the 175 students who took the placement exam.

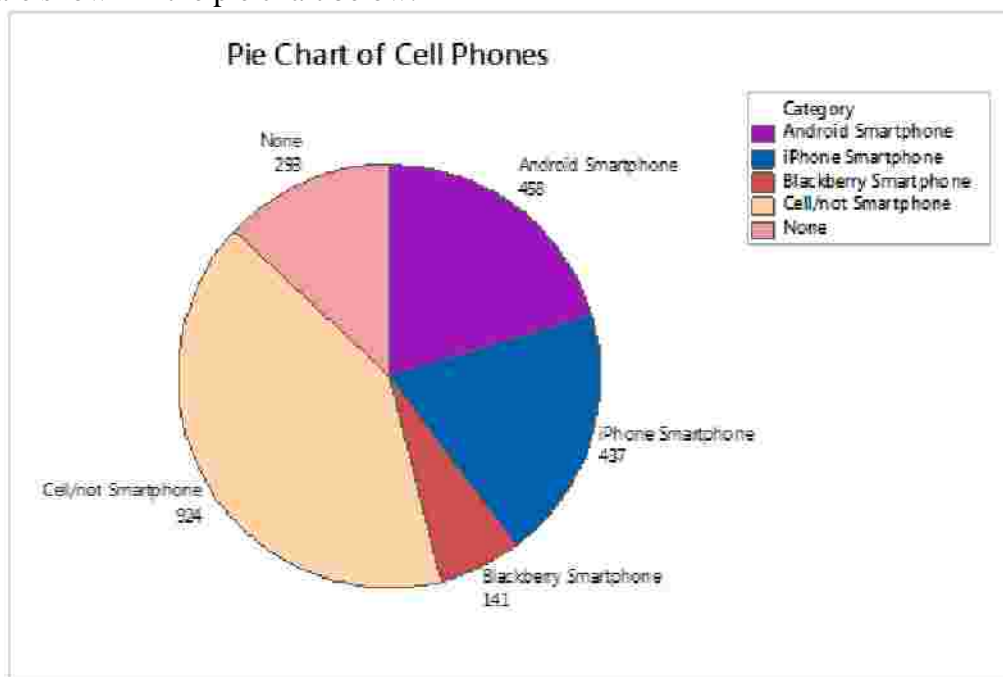
4.

Class	Frequency	Relative Frequency
Strongly Disagree	10	0.172
Disagree		
Agree	22	0.379
Strongly Agree		0.190
Total	58	1

The above frequency distribution table is a summary of responses to a customer survey. Some of the values are purposely missing. What must the frequency of Strongly Agree be?

- A) 11
- B) 0190
- C) 0.259
- D) 1

5. A 2012 survey examined cell phone ownership by U.S. adults. The results of the survey are shown in the pie chart below.



What percentage of the adults surveyed did NOT own a smartphone?

- A) 13%
- B) 45.9%
- C) 41%
- D) 54%

6. Concerning numeric data, a negatively skewed distribution has:
- A) most of the data concentrated in the lower values with relatively fewer larger values.
 - B) most of the data concentrated in the higher values with relatively fewer lower values.
 - C) a positive amount of values skewed across the center.
 - D) an equal amount of large and small values.
7. A distribution with only one peak is called:
- A) single peaking.
 - B) multimodal.
 - C) bimodal.
 - D) unimodal.

8.

Class	Frequency	Relative Frequency	Cumulative Relative Frequency
One			0.282
Two			0.776
Three			0.906
Four			0.956
Five			1
Total		1	

The above frequency distribution table is a summary of number of siblings a group of randomly selected American adults has. Some of the values are purposely missing. What is the relative frequency of people with two siblings?

- A) 0.494
 - B) 0.130
 - C) 0.776
 - D) More information is needed to answer the question.
9. A survey records a person's smoking status as either “yes” or “no.” This survey is recording what kind of data?
- A) categorical/qualitative
 - B) categorical/quantitative
 - C) numerical/quantitative
 - D) numerical/qualitative

10. A cardiologist is studying the effects of soothing music on a person's heart rate. He records his patient's at-rest heart rate in whole beats per minute before and after they listen to soothing music. The variable "heart rate" in this study is BEST described as:
- qualitative.
 - continuous.
 - discrete.
 - categorical.
11. μ is the population:
- mean.
 - average.
 - proportion.
 - median.
12. Calculate the mean from the following sample data:
- | | | | | | | | | | |
|---|----|---|----|----|----|---|---|---|----|
| 8 | 10 | 7 | 14 | 53 | 22 | 5 | 5 | 5 | 22 |
|---|----|---|----|----|----|---|---|---|----|
- 5
 - 151
 - 9
 - 15.1
13. Calculate $\bar{x}_{tr(0.10)}$ for the following sample data set:
- | | | | | | | | | | |
|---|----|---|----|----|----|---|---|---|----|
| 8 | 10 | 7 | 14 | 53 | 22 | 5 | 5 | 5 | 22 |
|---|----|---|----|----|----|---|---|---|----|
- 11.63
 - 15.1
 - 15.5
 - 9
14. If the sample mean is GREATER THAN the sample median, the sample is:
- positively skewed.
 - negatively skewed.
 - symmetric.
 - not valid for inference.
15. What is the mode of the following sample data set?
- | | | | | | | | | | |
|---|----|---|----|----|----|---|---|---|----|
| 8 | 10 | 7 | 14 | 53 | 22 | 5 | 5 | 5 | 22 |
|---|----|---|----|----|----|---|---|---|----|
- 15.1
 - 9
 - 5
 - 22

16. Calculate $\%$ for the following sample data set:

8 10 7 14 53 22 5 5 5 22

- A) 5
- B) 11.5
- C) 9
- D) 15.1

17. \bar{x} is the:

- A) population mean.
- B) sample mean.
- C) geometric mean.
- D) sample median.

18. s^2 is the:

- A) sample standard deviation.
- B) population standard deviation.
- C) population variance.
- D) squared sample standard deviation.

19. Which measure of central tendency is also the 50th percentile?

- A) mean
- B) median
- C) mode
- D) arithmetic average

20. What is the LARGEST possible value of the sample standard deviation?

- A) 100
- B) 1,000
- C) 1,000,000
- D) There is no largest possible value.

21. What is the SMALLEST possible value for a sample standard deviation?

- A) -10
- B) 0
- C) 1
- D) There is no smallest value.

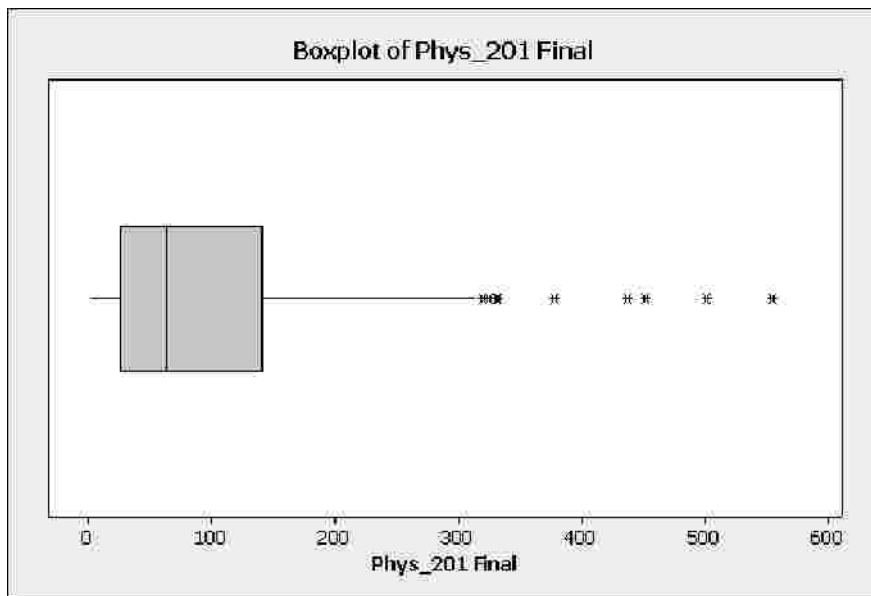
22. Which of the following can be used to check normality?
- A) Chebyshev's Rule
 - B) the Empirical Rule
 - C) a z -score
 - D) the percentiles
23. The lengths of the reigns of 50 British monarchs (in years) are summarized with a five-number summary as follows:

$$x_{\min} = 0, Q_1 = 6, \text{\textit{M}} = 15.5, Q_3 = 24, x_{\max} = 63, \bar{x} = 18.92$$

Based on the five-number summary, the overall shape of the lengths of these reigns appears to be:

- A) right-skewed.
 - B) symmetric.
 - C) left-skewed.
 - D) Data shape can only be discerned from visual methods.
24. The following is an abbreviated list of scores from a recent exam. Which exam score is the 10th percentile?
- | | | | | | |
|----|----|----|----|-----|----|
| 82 | 88 | 74 | 84 | 70 | 98 |
| 62 | 28 | 51 | 98 | 100 | 56 |
- A) 98
 - B) 28
 - C) 51
 - D) 56

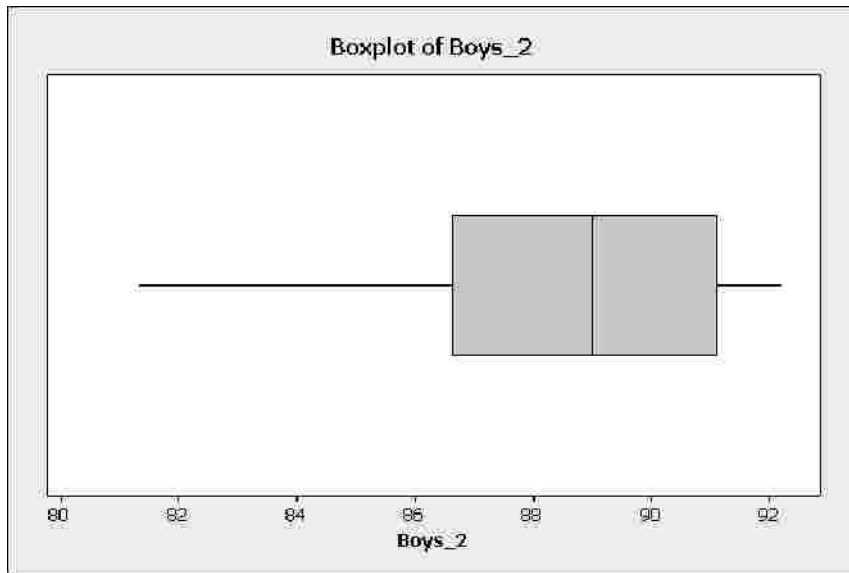
25.



The final exam for an intermediate level engineering physics class consisted of six parts, each worth 100 points (600 total points for the final exam). The total scores from the class are summarized in the boxplot above. The overall shape of this data set is BEST described as:

- A) symmetric.
- B) left-skewed.
- C) bimodal.
- D) right-skewed.

26.



The boxplot above summarizes the heights in centimeters of a group of 2-year-old boys. The first quartile of the data set appears to be nearest to:

- A) 87.
- B) 89.
- C) 91.
- D) Quartiles are not discernable from a boxplot.

27. The mode of a symmetric, bell-shaped distribution should:

- A) be roughly the same as the mean.
- B) be roughly the same as the median.
- C) be unique.
- D) All of the above

28. Calculate s^2 for the following sample:

5 2 6 2 7 3

- A) 4.57
- B) 2.14
- C) 4.17
- D) 5