

Name _____

Problem Set 1

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

Determine whether the given value is a statistic or a parameter.

- 1) A sample of 120 employees of a company is selected, and the average age is found to be 37 years. 1) _____
A) Statistic B) Parameter

Identify the number as either continuous or discrete.

- 2) The number of freshmen entering college in a certain year is 621. 2) _____
A) Continuous B) Discrete

Determine which of the four levels of measurement (nominal, ordinal, interval, ratio) is most appropriate.

- 3) The temperatures of eight different plastic spheres. 3) _____
A) Nominal B) Ordinal C) Interval D) Ratio

Identify the sample in the following example.

- 4) An employee at an ice cream store asks 3 different customers what their favorite flavor is. 4) _____
A) All flavors of ice cream B) The employee
C) All people who eat ice cream D) The 3 customers

- 5) 100,000 randomly selected American adults were asked if they drank at least 48 oz. of water a day and only 45% said yes. 5) _____
A) All American adults who drink at least 48oz. of water a day
B) The 45% who said yes
C) The 100,000 randomly selected adults
D) All American adults

Determine which of the four levels of measurement (nominal, ordinal, interval, ratio) is most appropriate.

- 6) The sample of spheres categorized from softest to hardest. 6) _____
A) Ratio B) Nominal C) Ordinal D) Interval

- 7) Salaries of college professors. 7) _____
A) Ratio B) Interval C) Ordinal D) Nominal

- 8) Survey responses of "good, better, best". 8) _____
A) Nominal B) Ratio C) Ordinal D) Interval

Identify the number as either continuous or discrete.

- 9) The average height of all freshmen entering college in a certain year is 68.4 inches. 9) _____
A) Discrete B) Continuous

Determine whether the given value is a statistic or a parameter.

- 10) After taking the first exam, 15 of the students dropped the class. 10) _____
A) Statistic B) Parameter

Find the mean for the given sample data.

- 11) The normal monthly precipitation (in inches) for August is listed for 20 different U.S. cities. Find the mean of the data. 11) _____
3.5 1.6 2.4 3.7 4.1
3.9 1.0 3.6 4.2 3.4
3.7 2.2 1.5 4.2 3.4
2.7 0.4 3.7 2.0 3.6
A) 2.80 in. B) 3.27 in. C) 2.94 in. D) 3.09 in.

- 12) Six college buddies bought each other Christmas gifts. They spent: 12) _____
\$296.96 \$280.97 \$262.47
\$288.92 \$176.20 \$125.70
What was the mean amount spent? Round your answer to the nearest cent.
A) \$357.81 B) \$274.24 C) \$286.24 D) \$238.54

Find the median for the given sample data.

- 13) The distances traveled (in miles) to 7 different swim meets are given below: 13) _____
17, 26, 30, 51, 62, 64, 81
Find the median distance traveled.
A) 62 miles B) 47 miles C) 30 miles D) 51 miles

- 14) The normal monthly precipitation (in inches) for August is listed for 20 different U.S. cities. Find the median of the data. 14) _____
3.5 1.6 2.4 3.7 4.1
3.9 1.0 3.6 4.2 3.4
3.7 2.2 1.5 4.2 3.4
2.7 0.4 3.7 2.0 3.6
A) 3.40 in. B) 3.50 in. C) 3.45 in. D) 2.94 in.

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

- 15) The speeds (in mi/h) of the cars passing a certain checkpoint are measured by radar. The results are shown below. 15) _____
- 43.6 43.4 43.7 42.5 44.3
44.3 43.4 41.7 40.4 42.5
43.6 41.7 42.5 42.9 43.4
41.2 41.2 43.7 40.5 43.6
- A) 43.6, 42.5, 43.4 B) 43.4
C) 43.6 D) 43.17

- 16) Last year, nine employees of an electronics company retired. Their ages at retirement are listed below. Find the mode(s). 16) _____
- 56 67 60
50 51 66
59 58 57
- A) 56, 67, 60, 50, 51, 66, 59, 58, 57 B) 58
C) 19.7 D) No mode

Find the midrange for the given sample data.

- 17) The heights (in feet) of 15 different poplar trees are shown below. Find the midrange. 17) _____
- 29.3 34.3 32.3 27.3 30.3
28.3 31.3 35.3 32.3 36.3
29.3 25.3 31.3 32.3 37.3
- A) 31.3 feet B) 14.65 feet C) 4.17 feet D) 32.80 feet

- 18) A runner mentally estimates the number of ounces of liquid she drinks at each mile of a 13 mile race (she does not count the liquid consumed at the aid station at mile 13, the finish line). The results are shown below. Find the midrange. 18) _____
- 3.7 5.2 5.0 4.7
6.7 4.8 4.3 3.7
4.4 5.2 4.7 5.7
- A) 6.20 ounces B) 5.20 ounces C) 3 ounces D) 7.4 ounces

Find the range for the given sample data.

- 19) The owner of a small manufacturing plant employs six people. As part of their personnel file, she asked each one to record to the nearest one-tenth of a mile the distance they travel one way from home to work. The six distances are listed below: 19) _____
- 2.4 5.5 1.9 4.6 6.1 3.3
- Compute the range.
- A) 5.5 B) 0.9 C) 4.2 D) 1.9

- 20) Rich Borne is currently taking Chemistry 101. On the five laboratory assignments for the quarter, he got the following scores: 20) _____
 30 38 13 48 53
 Compute the range.
 A) 53 B) 13 C) 8 D) 40

Find the variance for the given data. Round your answer to one more decimal place than the original data.

- 21) Compute the variance. Jeanne is currently taking college zoology. The instructor often gives quizzes. On the past five quizzes, Jeanne got the following scores: 21) _____
 15 20 1 15 19
 A) 46.4 B) 58.0 C) 57.9 D) 98.8

- 22) The weights (in ounces) of 10 cookies are shown. 22) _____
 0.85 1.33 1.38 0.88 1.29
 0.99 0.89 1.03 1.16 0.81
 Compute the variance.
 A) 0.037 B) 0.034 C) 0.046 D) 0.041

Find the standard deviation for the given data. Round your answer to one more decimal place than the original data.

- 23) The manager of an electrical supply store measured the diameters of the rolls of wire in the inventory. The diameters of the rolls (in m) are listed below. 23) _____
 0.161 0.408 0.363 0.424 0.113 0.527 0.178
 Compute the standard deviation s.
 A) 0.424 B) 0.6752 C) 0.8261 D) 0.1586

- 24) Christine is currently taking college astronomy. The instructor often gives quizzes. On the past seven quizzes, Christine got the following scores: 24) _____
 45 19 128 28 14 53 79
 Compute the standard deviation s.
 A) 128 B) 28,800 C) 40.1 D) 19,136.6

Solve the problem.

- 25) The coefficient of variation, expressed as a percent, is used to describe the standard deviation relative to the mean. It allows us to compare variability of data sets with different measurement units and is calculated as follows: 25) _____

$$\text{coefficient of variation} = 100 (s/\bar{x})$$

Find the coefficient of variation for the following sample of weights (in pounds):

- 152 120 186 105 197
 128 172 160 116 125
 A) 21.8% B) 23.9% C) 26.8% D) 19.1%