

Name \_\_\_\_\_

Date \_\_\_\_\_

1. Use the list of data to calculate the following:

77, 80, 98, 67, 85, 82, 85, 75, 93, 68

- a. \_\_\_\_\_ mean
- b. \_\_\_\_\_ median
- c. \_\_\_\_\_ mode
- d. \_\_\_\_\_ range
- e. \_\_\_\_\_ standard deviation
- f. Box and whisker Plot

2. Use the list of data to calculate the following:

37, 21, 46, 36, 47, 52, 98, 31

- a. \_\_\_\_\_ mean
- b. \_\_\_\_\_ median
- c. \_\_\_\_\_ mode
- d. \_\_\_\_\_ range
- e. \_\_\_\_\_ standard deviation
- f. Box and whisker Plot

3. The numbers of electoral votes in 2004 for 11 western states are shown. Find the mean and the standard deviation of the data. Identify any outliers, and describe how they affect the mean and standard deviation.



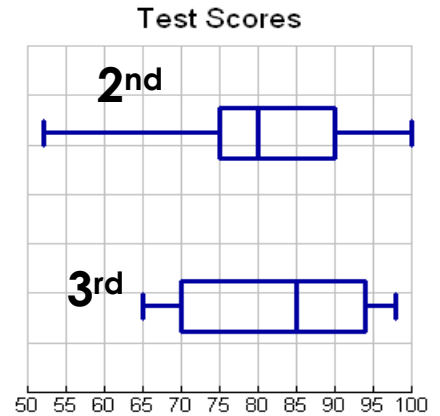
4. This table shows the average low temperature, in °F, recorded in Macon, GA, and Charlotte, NC, over a six-day period.

Day	1	2	3	4	5	6
Temperature, in °F, in Macon, GA	71	72	66	69	71	73
Temperature, in °F, in Charlotte, NC	69	64	68	74	71	75

Which conclusion can be drawn from the data? (Multiple Choice)

- A. The interquartile range of the temperatures is the same for both cities.
- B. The lower quartile for the temperatures in Macon is lower than the lower quartile for the temperatures in Charlotte.
- C. The mean and median temperatures of Macon were higher than the mean and median temperatures of Charlotte.
- D. The upper quartile for the temperatures in Charlotte was lower than the upper quartile for the temperatures in Macon.

5. Which statement below is NOT true?
- A. 2<sup>nd</sup> period had the highest score on the test
  - B. The median for 2<sup>nd</sup> period is 5 less than the median for 3<sup>rd</sup>
  - C. The LQ for 2<sup>nd</sup> period is 5 less than LQ for 3<sup>rd</sup> period
  - D. The UQ for 3<sup>rd</sup> period is 94



6. Fill in the blanks:
- a) The median for 2<sup>nd</sup> period is \_\_\_\_\_
  - b) The median for 3<sup>rd</sup> period is \_\_\_\_\_
  - c) The lowest score for 3<sup>rd</sup> period is \_\_\_\_\_
  - d) The lower quartile for 2<sup>nd</sup> period is \_\_\_\_\_
  - e) The spread of the middle 50% for 2<sup>nd</sup> period is \_\_\_\_\_

7. Mrs. Stewart would like to determine if the cafeteria should sell snacks during non-lunch periods. Which sampling method is most likely to yield an accurate prediction of the population?
- A. Survey every 20<sup>th</sup> student who enters the cafeteria during lunch
  - B. Survey 50 random students each from the 9<sup>th</sup>, 10<sup>th</sup>, 11<sup>th</sup>, and 12<sup>th</sup> grade
  - C. Survey the first 25 students that walk into school
  - D. Survey all the seniors.

8. Write an example of a self-selected Survey. Be creative!

9. In a survey of 50 Hillgrove students, 22 said that they plan on attending the next baseball game. The school has 2300 students, predict the number of students attending the game.

**Explain whether each situation is an experiment or an observational study**

10. A researcher asks 1000 randomly chosen adults to list the average number of hours of sleep they get per night for six months and examines whether the amount of sleep affects the number of colds the adults get.
11. A grocery store manager wants to know how much more of a certain food item will sell if he lowers the price by 10%.

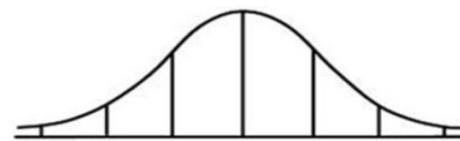


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17. The mean of a set of data is 51 and the standard deviation is 4.  
Find these percentages: **Show your work!!**

a.  $P(X \geq 54)$

b.  $P(X \leq 48)$



c.  $P(X \geq 57)$

d.  $P(48 \leq X \leq 60)$

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18. A group of 625 students has a mean age of 15.8 years with a standard deviation of 0.6 years. The ages are normally distributed. How many students are younger than 16.2 years?

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**Find the Margin of Error for a survey based upon the sample size. Round to the nearest tenth of a percent.**

19. 396

20. 13,567

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**Find the sample size required to achieve the given margin of error. Round your answer to the nearest whole number.**

21.  $\pm 9.5\%$

22.  $\pm 14.3\%$

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**Cell Phones:** In a survey of 2,532 teenagers, 68% said that they spend 10 to 12 hours a week on Twitter.

23. What is the margin of error for this survey? Round to the nearest tenth.

24. Give an interval that includes the margin of error.

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