

Name _____

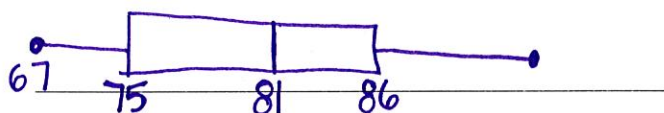
Date _____

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

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

- a. 81 mean
 b. 81 median
 c. 85 mode
 d. 75 Q1
 e. 86 Q3

f. Box and whisker Plot



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

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

- a. 46 mean
 b. 41.5 median
 c. NONE mode
 d. 33.5 Q1
 e. 49.5 Q3

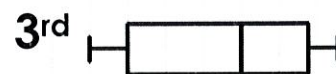
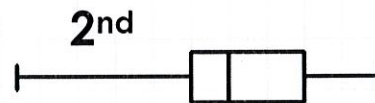
f. Box and whisker Plot



3. Which statement below is NOT true?

- a) 2nd period had the highest score on the test
 b) The median for 2nd period is 5 less than the median for 3rd
 c) The LQ for 2nd period is 5 less than LQ for 3rd period
 d) The UQ for 3rd period is 94

Test Scores



50 55 60 65 70 75 80 85 90 95 100

4. Fill in the blanks:

- a) The median for 2nd period is 80
 b) The median for 3rd period is 85
 c) The lowest score for 3rd period is 65
 d) The lower quartile for 2nd period is 75
 e) The spread of the middle 50% for 2nd period is 15

5. 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 20th student who enters the cafeteria during lunch
 b) Survey 50 random students each from the 9th, 10th, 11th, and 12th grade
 c. Survey the first 25 students that walk into school
 d. Survey all the seniors.

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

$$\frac{22}{50} = \frac{x}{2300} \quad x = 1,012 \text{ students}$$

Explain whether each situation is an experiment or an observational study

7. 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.

observational

8. A grocery store manager wants to know how much more of a certain food item will sell if he lowers the price by 10%.

Experiment

The study below is a randomized experiment. Describe the treatment, the treatment group, and the control group.

9. An engineer wants to know if a fuel additive will affect the fuel efficiency of a car. He recruits 40 volunteers and randomly assigns them to two groups. One group fills their cars with gas with the additive. The other group fuels their cars with plain gas. The group that uses the additive sees a 5% decrease in fuel efficiency.

control: group w/out fuel additive

treatment: Fuel additive

treatment group:
Group using fuel additive

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

10. 396

11. 13,567

$\pm 5\%$

$\pm .9\%$

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

12. $\pm 9.5\%$

13. $\pm 14.3\%$

111

49

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

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

$\pm 2\%$

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

66% - 70%