Accuracy and Precision Homework

Name: _____ Date: _____

- Accuracy: the answer is EXACT!!!
- Approximation: the answer is rounded at the END!!!
- Estimation: the answer is rounded at the beginning!!!

Directions: Determine whether the situation requires an exact answer, an approximation, or an estimate.

1. A recipe that calls for 4 cups of sugar is being doubled.

2. A party planner needs to determine how many entrees to order. The client suggests there will be between 100 to 150 guests in attendance.

3. A square with a side of 9 yd has a diagonal of 12.72 yd.

4. The temperature on a thermometer reads 32°F.

5. An elevator can hold up to 1T. The average weight of the passengers is 180 lb. Based on this average and the fact that there are 10 people on the elevator, there is a total of 1800 lb.

Directions: Solve each problem.

6. A nurse practitioner has written a prescription for a medicine to be given in a dosage of 0.05mL per pound of the weight of the patient. If a patient is 150lb, what should the dosage for this patient be? Describe the accuracy of your answer.

7. Estimate an 20% tip for a taxi cab bill of $47.23.

Directions: Choose the best answer.
8. Which of the following represents an approximate quantity?

    a. The slope of a hill is about 20°.
    b. A female dog had 10 pups.
    c. Weather.com predicts a low temperature of 20°F today.
    d. The maximum capacity of an elevator is 1,500 pounds.

9. For which of the following situations would you need an exact answer?

    a. The number of bananas on a peanut butter banana sandwich.
    b. The number of people in a city.
    c. The number of fans in the Lassiter football stands.
    d. The number of passengers on a school bus.

10. If you were to measure the volume of an ice cube in your freezer, what would be a reasonable unit to use?

    a) Cubic feet   b)Cubic miles   c) Square feet   d) Cubic inches

11. The length of the side of a particular square may be expressed as 1200 centimeters, 13.9 yards, 12,000 millimeters or 0.091 miles. Which unit is the BEST of these to express the square's perimeter in? How much do you expect her to pay for donuts?

    a) Miles   b)Yards   c) Centimeters   d) Millimeters

12. What is a good unit to measure the area of a room in a house?

    a) Square feet   b) Square miles   c) Square inches   d) Square millimeters

13. Sandra collected data about the amount of rainfall a city received each week. Which value is MOST LIKELY part of Sandra's data?
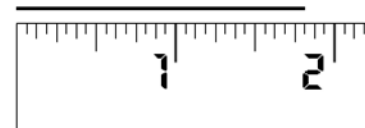
    a) 3.5 feet   b) 3.5 yards   c) 3.5 inches   d) 3.5 meters

14. Which unit is the most appropriate for measuring the amount of water you drink in a day?

    a) Kiloliters   b) Liters   c) Megaliters   d) Milliliters

15. What is the most precise measurement this ruler can give for the line segment?
    a) 1 13/16 inches
    b) 1 7/8 inches
    c) 1 3/4 inches
    d) 2 inches

16. The most accurate reading this thermometer can give (in °F) is to the nearest
    a) 1 degree
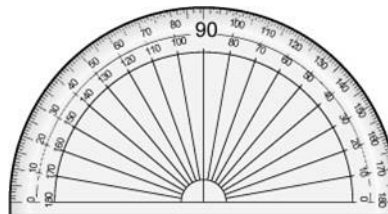   b) 5 degrees
    c) 10 degrees
    d) 20 degrees

17. What is the most precise measure this beaker can give?
    a) To the nearest 1 mL
    b) To the nearest 25 mL
    c) To the nearest 50 mL
    d) To the nearest 100 mL

18.   How precise can this protractor be?
    a) To the nearest degree
    b) To the nearest ten degrees
    c) To the nearest tenth degree
    d) To the nearest hundredth degree

19. The most precise measure this ruler can give is to the nearest _____ .
    a) Inch   b) Half inch   c) Eighth inch   d) Quarter inch