USA TEST PREP

Coordinate Algebra EOC (GSE) Quiz Answer Key
Quantities - (MGSE9-12.N.Q.3) Level Of Accuracy
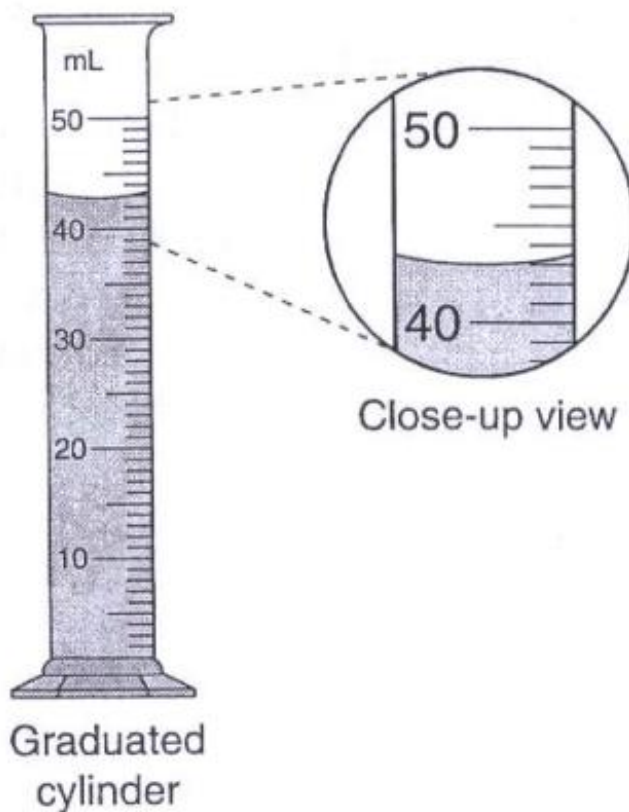
Student Name: _____   Date: _____

Teacher Name: THUYNGA DAO   Score: _____

1)

Graduated
cylinder

Which is the MOST precise measurement this cylinder gives for the volume of liquid it contains?
A)   40.3 mL
B)   43.0 mL
C)   46.0 mL
D)   46.3 mL

Explanation:
43.0 mL is correct. The scale of the cylinder shows only whole milliliters.

2) Choose the situation in which the use of exact numbers is appropriate.
A)   **paying your power bill**
B)   adding bacon bits to a salad
C)   buying hamburgers for a cookout
D)   ordering flyers to hand out at a political rally

Explanation:
The solution is **paying your power bill**. In the other situations approximate numbers are more likely to be used.

**3)** Choose the situation in which exact numbers would most likely be used.
A)   Mark is buying hamburgers for a football tailgate.

B)   Deana is calculating her driving time for a trip to the beach.
C)   Carla is totaling the money made at the student council car wash.
D)   Maria is buying gallons of paint to cover the walls of the bedrooms in her home.

Explanation:
The solution is **Carla is totaling the money made at the student council car wash.** For the other scenarios, approximation is a practical way to calculate the amounts. For a fundraiser it is important to calculate the exact amount of money earned.

4)
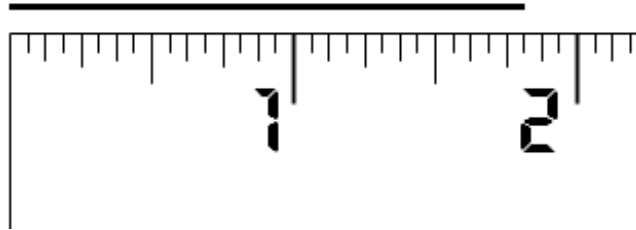
Which is the MOST precise measurement this ruler can give for the line segment?

A) $1\frac{13}{16}$ inches

B) $1\frac{7}{8}$ inches

C) $1\frac{3}{4}$ inches

D)   2 inches

Explanation:
$1\frac{13}{16}$ **inches** is correct. The scale of the ruler allows for sixteenth-inch precision, and the closest mark is there.

5) Choose the situation in which using exact numbers would MOST LIKELY be appropriate.

    A)   **Darryl is doing his taxes.**

    B)   Hillary wants to save enough for her new car.

    C)   Frank is working on a project and needs to buy paint for his display.

    D)   Ken is making a salad and wants to know how many cherry tomatoes to use.

Explanation:

Darryl doing his taxes would require exact numbers. In all of the other answers, an estimate of the answer will work just fine.

6) Which would give the most precise measurement?

    A)   **Find the distance between 2 cities to the nearest mile.**

    B)   Find the distance between 2 cities to the nearest 5 miles.

    C)   Find the distance between 2 cities to the nearest 10 miles.

    D)   Find the distance between 2 cities to the nearest 100 miles.

Explanation:

The solution is **Find the distance between 2 cities to the nearest mile** . Finding the distance to the nearest mile, though difficult, is the most precise.

7)

Sarah and Kelvin are calculating the area of a circle with a radius of 52 cm. Kelvin uses 3.14 for pi when calculating this area while Sarah uses the pi button on her calculator. Kelvin gets a solution of 8,490.56 cm^2, and Sarah gets a solution of 8,494.87 cm^2.

Who has the most accurate solution? Why?

    A)   Both answers are equally accurate.

    B)   Kelvin; He did not have to round his answer.

    C)   Neither answer is accurate as pi or 3.14 is not in the formula for the area of a circle.

    D)   **Sarah; The pi button on the calculator gives a more accurate representation for pi than 3.14.**

Explanation:

The solution is **Sarah; The pi button on the calculator gives a more accurate representation for pi than 3.14**. Using 3.14 as an approximation for pi yields a less accurate result.

8)

The MOST precise measurements this ruler can give are to the nearest

    A)   half inch.

    B)   eighth inch.

    C)   quarter inch.

    D)   **sixteenth inch.**

Explanation:

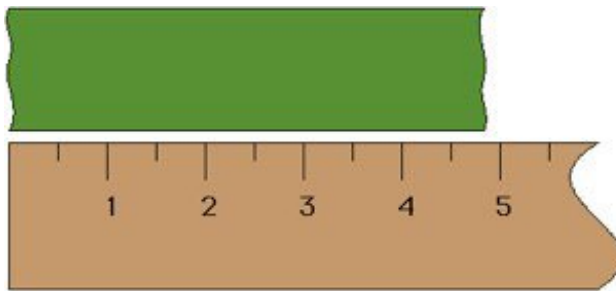The scale of the ruler only allows for measurement to the nearest **sixteenth inch**.

9) Which measurement is the most precise?

    A)   29 cm

    B)   28.8 cm

    C)   28.76 cm

    D)   **28.762 cm**

Explanation:

The solution is **28.762 cm**. This measurement is rounded to the nearest thousandth which is more precise than the other measures.

10)

The MOST precise measurements this ruler can give are to the nearest
- A)   inch.
- **B)   half inch.**
- C)   eighth inch.
- D)   quarter inch.

Explanation:
The scale of the ruler only allows for measurement to the nearest **half inch**.

11)

The most accurate reading this thermometer can give (in °F) is to the nearest
- A)   degree.
- B)   five degrees.
- **C)   ten degrees.**
- D)   twenty degrees.

Explanation:
Only multiples of 10 are marked, so it can give a reading only to the nearest **ten degrees.**

12) For which of the situations would estimating be the appropriate method of calculation?
- A)   Calculating your tax return.
- B)   A teacher calculating your grade.
- C)   You are paying for a movie ticket.
- **D)   Joey has $20 and wants to know if he has enough money to go the movies and get popcorn and a drink.**

Explanation:
Estimation should only be used when you want a "best guess", never anytime you want to be accurate; so the correct answer is **Joey has $20 and wants to know if he has enough money to go the movies and get popcorn and a drink.**.

13)

This luggage scale can measure weight to the nearest
- A)   pound.
- B)   half pound.
- **C)   tenth of a pound.**
- D)   quarter of a pound.

Explanation:
Since the scale shows results to one decimal place, it is able to read to the nearest **tenth of a pound**.

14) Choose the situation in which the use of approximate numbers is appropriate.
- A)   the cost of tickets to a concert
- B)   an inventory of automobiles at a dealership
- **C)   the population of the United States based on a census**
- D)   the number of buses needed to transport the band to an out of town game

Explanation:
The solution is **the population of the United States based on a census**. With this large sample and the ever-changing population, it would be impossible to get an exact answer. Therefore, an approximation is appropriate.

15)
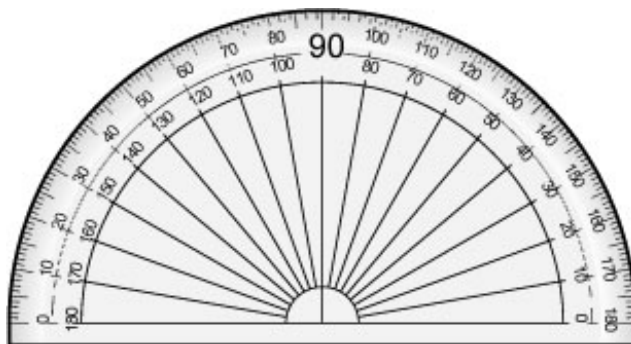
How precise can this protractor be?
- **A)** **to the nearest degree**
- B)   to the nearest ten degrees
- C)   to the nearest tenth degree
- D)   to the nearest hundredth degree

Explanation:
Between 0 and 10 degrees there are ten hash marks therefore the protractor can measure **to the nearest degree**
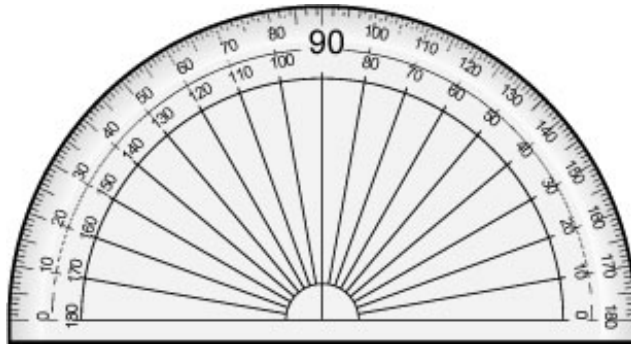
16)

What is the most precise measurement this beaker can give?
- A)   the nearest 1 mL
- **B)** **to the nearest 25 mL**
- C)   to the nearest 50 mL
- D)   to the nearest 100 mL

Explanation:
The hash marks are labeled every 50 mL but their is a hash mark between those therefore, the beaker can measure **to the nearest 25 mL**

17)

Jenny has a problem where she has to measure an angle that is drawn on the paper. She is going to use this protractor to do so. How precise can she be?

A)   **to the nearest one degree.**
B)   to the nearest ten degrees.
C)   to the nearest tenth degree.
D)   to the nearest hundredth degree.

Explanation:
Each mark on the protractor represents one degree. Therefore it can measure **to the nearest one degree.**

18) Henry's Butcher Shop uses an electronic scale that measures to 1/100 of a pound. Which is the most accurate measurement based on the limitations of the scale that might be found on a package of meat sold by Henry?
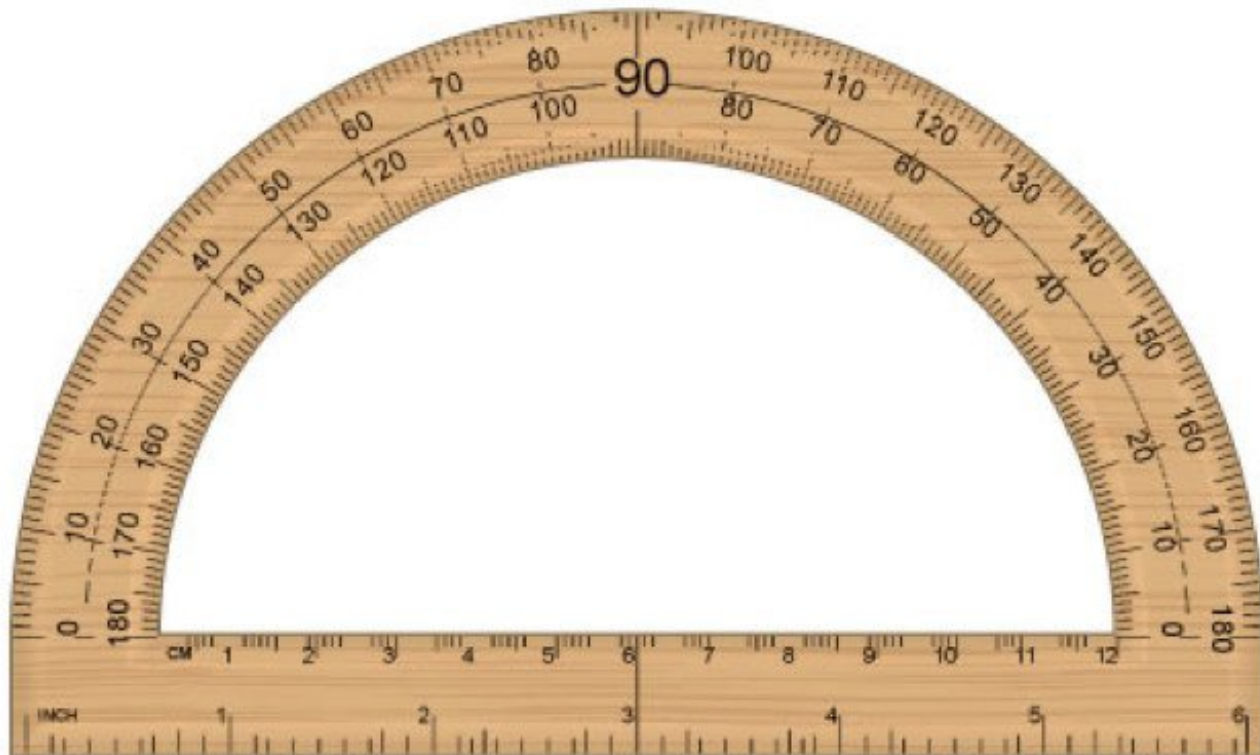
A)   3 pounds and 1 ounce
B)   **3.16 pounds**
C)   3.161 pounds
D)   3.1611 pounds

Explanation:
3.16 pounds

Accuracy is how close a measured value is to the actual or true value. The balance is accurate to the nearest 1/100 pound; thus, the highest level of accuracy appropriate to the limitations of the balance.

19)

This protractor can measure to the nearest
- **A)** **one degree.**
- B) ten degrees.
- C) tenth degree.
- D) hundredth degree.

Explanation:
Each mark on the protractor represents one degree. Therefore it can measure to the nearest **degree.**

20) Mitch needs four 10 gram samples of NaCl (Sodium Chloride) for an experiment. Mitch is using a balance that measures to 1/10 of a gram. Which is the most accurate measurement based on the limitations of the balance that might be found in his recorded data?

- **A)** **9.9 grams**
- B)   9.91 grams
- C)   9.911 grams
- D)   9.991 grams

Explanation:
9.9 grams

Accuracy is how close a measured value is to the actual or true value. The balance is accurate to the nearest 1/10 gram; thus, the highest level of accuracy appropriate to the limitations of the balance.

21) For which situation is the use of approximate numbers most appropriate?

- A)   preparing your yearly taxes
- **B)** **ordering programs for a high school musical**
- C)   paying a cashier for a meal at a fast food restaurant
- D)   the maximum number of basketball players allowed on the court at a time

Explanation:
The solution is **ordering programs for a high school musical**. For the other situations it is important to use exact numbers.

22) Justin bought a 12 ounce bag of candy. He wants to know if it's really 12 ounces, so he uses a scale and makes four measurements. Which measurement is the most precise of the four recorded?

- A)   10.013 ounces
- **B)** **10.0133 ounces**
- C)   10.03 ounces
- D)   10.1 ounces

Explanation:
10.0133 ounces

Precision is a property of measurement related to the unit of measure. The more exact the measurement -- the more precise.

23)

What is the most precise reading of the temperature this thermometer can give, given the marks on it?

- A)   60°
- B)   65°
- **C)** **70°**
- D)   75°

Explanation:
The best measurement we can get is **70°**, since there are no marks between 70 and 80.

24)

$$(2.5)^2$$

Julie is solving the problem that is shown. How precise can she be?

  A)   to the nearest unit
  B)   to the nearest tenth
  C)   to the nearest hundredth.
  D)   to the nearest thousandth

Explanation:
If you multiply the problem out (2.5)(2.5) = 6.25 which is an exact answer. Therefore, she can be **to the nearest hundredth**

25) Hailey, a chemistry student, is measuring samples of a metallic substance for an experiment on density, using a balance that measures to 1/10 of a gram. Which is the most accurate measurement based on the limitations of the balance that might be found in her recorded data?

    A)   9.01 grams
    B)   9.2 grams
    C)   9.24 grams
    D)   9.244 grams

Explanation:
9.2 grams

Accuracy is how close a measured value is to the actual or true value. The balance is accurate to the nearest 1/10 gram; thus, the highest level of accuracy appropriate to the limitations of the balance.

26) A box is known to hold exactly 125 in^3. Which side dimensions produce the most accurate measurement of the box?

    A)   4.9 x 5.1 x 5.0
    B)   4.91 x 5.11 x 5.01
    C)   4.911 x 5.112 x 5.011
    D)   4.9112 x 5.1122 x 5.0114

Explanation:
4.9 x 5.1 x 5.0

4.9 x 5.1 x 5.0 = 124.95 in^3 is the closest to the true known value.

The other answers are more precise, but not as accurate. Accuracy is how close a measured value is to the actual or true value.

27) Which is most likely the thickness of a penny when measured with a ruler?

    A)   0.016 in
    B)   1.5 mm
    C)   1.5 cm
    D)   1.55 mm

Explanation:
1.5 mm

0.016 in and 1.55 mm are both correct, but a ruler would not be able to deliver that degree of precision. Thus, 1.5 mm would be the most precise value.

28) A shipping container is known to hold exactly 1000 ft^3. If the container is measured, which side dimensions would produce the most accurate measurement of the container?

    A)   9.9 x 10.1 x 10.0
    B)   9.91 x 10.11 x 10.00
    C)   9.911 x 10.112 x 10.002
    D)   9.9113 x 10.1125 x 10.0028

Explanation:
9.9 x 10.1 x 10.0

9.9 x 10.1 x 10.0 = 999.9 ft^3 is the closest to the true known value.

The other answers are more precise, but not as accurate. Accuracy is how close a measured value is to the actual or true value.

29) Marty is measuring liquid fertilizer for his garden using a graduated cylinder that measures to a milliliter. Which is the most accurate measurement based on the limitations of the graduated cylinder that Marty might read?

- A) 5 ml
- B) 5.2 ml
- C) 5.21 ml
- D) 5.211 ml

Explanation:
5 ml

Accuracy is how close a measured value is to the actual or true value. The balance is accurate to the nearest milliliter; thus, the highest level of accuracy appropriate to the limitations of the balance.

30) Bailey wants to build a fence around her backyard. The professional survey recorded at Emory City Hall shows her backyard to have a perimeter of 488 feet. Bailey measures her yard four times. Which measurement is the most accurate of the four recorded?

- A) 486 feet and 6 inches
- B) 486.5 feet
- C) 486.55 feet
- **D) 487 feet**

Explanation:
487 feet

Accuracy is how close a measured value is to the actual or true value.