TRUE or FALSE

1) _____ Science attempts to organize and explain, in a systematic and logical manner, knowledge about our physical surroundings including our universe, our earth and ourselves.

2) _____ Boundaries between the scientific disciplines, like chemistry, biology and physics are very rigid.

3) _____ Analyze and organize data to make a general statement that <u>explains</u> an observation is what a theory is.

4) _____ The base metric quantity for mass has the symbol "m" and is called a meter.

Classify each of the following as an EXACT (E) or MEASURED (M) number..

5) 7 railroad cars   _____

6) 14 gallons of gasoline   _____

---

7) **If the accepted value for the length of an object is 6.78 cm, which of the following sets of experimental results is best described as both PRECISE AND ACCURATE?** *Circle the correct answer.*

   A) 6.88 cm, 6.88 cm, 6.58 cm (average = 6.78 cm)

   B) 6.79 cm, 6.78 cm, 6.77 cm (average = 6.78 cm)

   C) 6.71 cm, 6.71 cm, 6.72 cm (average = 6.71 cm)

   D) 6.78 cm, 6.38 cm, 6.48 cm (average = 6.55 cm)

8) **Which one of the following numbers contains 4 significant figures?** *MARK all that apply.*
   A) 0.0257   B) 3.090   C) 39.40   D) 9200   E) 6.43

Write the UNCERTAIN DIGIT and the UNCERTAINTY (±) in each of the following measurements.

9) 30 oz   _____

10) 3,275 mL   _____

11) The kelvin, which has an abbreviation of _____, is the accepted SI base unit for _____.

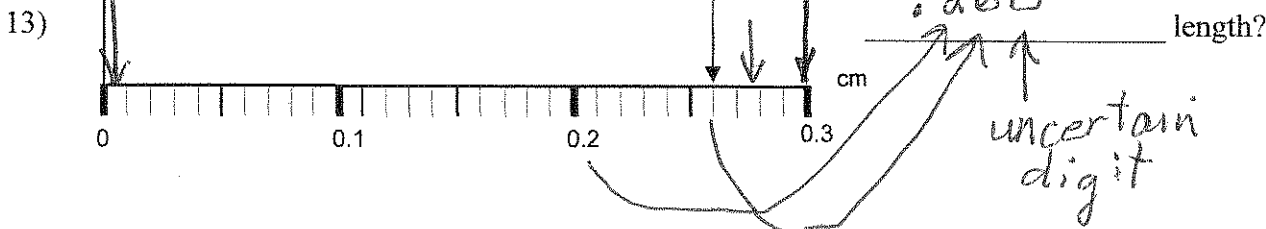12) Complete the following relationships between units.

   a. 10^{9} g = 1 Gg   d. __1__ mL = 1 cm^3

   b. 10^{-6} L = 1 µL   e. __1__ Mg = 1 t (t = metric ton)
                                      10^6 g   1000 kg = 1000 × 1000 g

Write the value and the uncertainty(±) of the following measurements.

13)

.260 _____ length?

uncertain digit

TRUE or FALSE

1) __T__ Science attempts to organize and explain, in a systematic and logical manner, knowledge about our physical surroundings including our universe, our earth and ourselves.

2) __F__ Boundaries between the scientific disciplines, like chemistry, biology and physics are very rigid.

3) __T__ Analyze and organize data to make a general statement that <u>explains</u> an observation is what a theory is.

4) __F__ The base metric quantity for mass has the symbol "m" and is called a meter.

Classify each of the following as an EXACT (E) or MEASURED (M) number..

5) 7 railroad cars   __E__

6) 14 gallons of gasoline   __M__

---

7) **If the accepted value for the length of an object is 6.78 cm, which of the following sets of experimental results is best described as both PRECISE AND ACCURATE?** *Circle the correct answer.*

A) 6.88 cm, 6.88 cm, 6.58 cm (average = 6.78 cm)

B) 6.79 cm, 6.78 cm, 6.77 cm (average = 6.78 cm)

C) 6.71 cm, 6.71 cm, 6.72 cm (average = 6.71 cm)

D) 6.78 cm, 6.38 cm, 6.48 cm (average = 6.55 cm)

8) **Which one of the following numbers contains 4 significant figures?** *MARK all that apply.*

A) 0.0257   B) 3.090   C) 39.40   D) 9200   E) 6.43

Write the UNCERTAIN DIGIT and the UNCERTAINTY (±) in each of the following measurements.

9) 30 oz   __3, ±10__

10) 3,275 mL   __5, ±1__

11) The kelvin, which has an abbreviation of __K__, is the accepted SI base unit for __temp__.

12) Complete the following relationships between units.

a. __10^9__ g = 1 Gg   d. __1__ mL = 1 cm

b. __10^{-6}__ L = 1 μL   e. __1__ Mg = 1 t (t = metric ton)

Write the value and the uncertainty(±) of the following measurements.

13) __0.260 ± .00__ length?

cm