

Vocabulary Review

Match the correct vocabulary term to each numbered statement. Write the letter of the correct term on the line.

Column A

1. the ratio of the mass of an object to its volume g
2. closeness of a measurement to the true value i
3. the mass of 1 L of water at 4°C h
4. difference between the experimental value and the accepted value f
5. the degree of hotness or coldness of an object k
6. the SI base unit of length j
7. a ratio of equivalent measurements l
8. a quantity that has both a number and a unit b
9. temperature scale on which water freezes at 0° and boils at 100° a
10. a way to analyze and solve problems, using the units of the measurements m
11. a method of expressing numbers as a product of a coefficient and a power of 10 c
12. the SI unit of energy d
13. the capacity to do work or to produce heat e

Column B

- a. Celsius scale
- b. measurement
- c. scientific notation
- d. joule
- e. energy
- f. error
- g. density
- h. kilogram
- i. accuracy
- j. meter
- k. temperature
- l. conversion factor
- m. dimensional analysis

3 SCIENTIFIC MEASUREMENT

Chapter Quiz

Answer the following questions and write the answers on the line.

1. If you measure a line three times with the same ruler, do your measurements become more accurate? no 3.1
2. Which form of the conversion factor would you use to convert 75 g to kg?  $1 \times 10^{-3} \text{ kg}$  3.3
3. How many significant figures does the measurement 0.4006 m have? 4 3.1
4. Round off the following measurements to two significant figures.
  - 4a. 0.083 m 3.1
  - 4b. 20°C
  - 4c. 6900 km
  - 5a.  $8.3 \times 10^2 \text{ m}$  3.1
  - 5b.  $2.0 \times 10^1 \text{°C}$
  - 5c.  $6.9 \times 10^3 \text{ km}$

Choose the best answer and write its letter on the line.

6. Which of these is the smallest? b
  - a. one liter
  - b. one microliter
  - c. one milliliter
7. The metric prefix kilo- means: c
  - a. one thousand times smaller.
  - b. ten times smaller.
  - c. one thousand times larger.

Solve the following problems in the space provided.

8. Convert -55°C to K. (Recall that °C = K - 273.)

$$K = -55^\circ\text{C} + 273 = 218$$

9. The density of a substance, as measured by a student, is 4.80 g/cm<sup>3</sup>. The accepted value, as printed in a reliable handbook, is 5.10 g/cm<sup>3</sup>. Calculate the percent error.

$$\% \text{ error} = \frac{5.10 - 4.80}{5.10} \times 100\% = 5.88\%$$