

1. Explain why the following statements are true, describing which numbers are significant, and which are not.

A. The measurement 90.7 g has three significant figures.

B. The measurement 0.0742 L has three significant figures.

C. The measurement 18200 m has three significant figures.

D. The measurement 18.200 seconds has five significant figures.

2. Write the number of significant figures in the following measurements.

_____ A. 2.708

_____ H. 0.00480

_____ O. 4.678×10^{22}

_____ B. 50.007

_____ I. 540300

_____ P. 3.67×10^{-4}

_____ C. 0.00045

_____ J. 287.345

_____ Q. 0.000000875

_____ D. 589000

_____ K. 16.3050

_____ R. 3322.008

_____ E. 50800

_____ L. 3000010

_____ S. 4506.003

_____ F. 789.006

_____ M. 0.00458

_____ T. 56.000

_____ G. 507.7800

_____ N. 6.38×10^9

_____ U. 30.230

3. Round 80.45 to

a) 3 significant figures

b) 2 significant figures

c) 1. significant figure

4. Round the following numbers to three significant figures

_____ A. 50.63

_____ E. .004536

_____ I. 129.8

_____ B. 1823

_____ F. 4.5636×10^{-3}

_____ J. 1.2046

_____ C. 1.823×10^3

_____ G. 12.98

_____ K. 120.46

_____ D. 08129

_____ H. 13.02

_____ L. 12.04

5. Matching: Match each description in Column B to the correct term in Column A.

Column A

_____ 1. accuracy

_____ 2. measurement

_____ 3. precision

_____ 4. scientific notation

_____ 5. experimental value

_____ 6. significant figures

Column B

a. measure of how close a series of measurements are to one another

b. measure of how close a measurement comes to the actual value

c. digits in a measurement that are known plus one that is estimated

d. a value determined in the laboratory e. a quantity that has both a number and a unit

f. a method of expressing numbers as a product of a coefficient and a power of 10.

6. Use your calculator to answer the following, using the correct significant figures

A. $2.345 + 6.487 =$

F. $68.439 - 54.1 =$

B. $2.7 \times 10^4 + 3.67 \times 10^4 =$

G. $7.8 \times 10^6 - 2.4 \times 10^5 =$

C. $8.4 \times 10^{-4} + 6.89 \times 10^{-4} =$

H. $2.7 \times 10^{-4} - 3.67 \times 10^{-5} =$

D. $456 \times 21 =$

I. $3200 \times 460 =$

E. $\frac{124.07}{5.3} =$

J. $\frac{6.74034 \times 10^5}{4.302 \times 10^{-3}} =$

7. Use your calculator to answer the following. Write your answer in scientific notation.

A. $6,000,000 \times 800,000 =$

E. $\frac{6,000,000}{+800,000}$

G. $\frac{6,200,000}{-800,000}$

B. $(6 \times 10^6) \times (8 \times 10^5) =$

C. $\frac{(6 \times 10^6)}{(8 \times 10^8)} =$

F. $\frac{(6 \times 10^6)}{+(8 \times 10^8)} =$

H. $\frac{(6 \times 10^6)}{-(8 \times 10^8)} =$

D. $\frac{6,000,000}{800,000} =$

8. Which of these rulers could have been used to measure the following distances?

_____ A. 2.7 cm

_____ B. 3 cm

_____ C. 2.72

_____ D. 10.1

_____ E. 11.2

_____ F. 6.72

_____ G. 10.74

