

Chemistry – Chapter 3 Book assignment #2: Math with significant figures

1. A student measures the depth of a swimming pool to be 2.04 meters at its deepest end. The accepted value is 2.00 m. What is the student's percent error?
2. Count the significant figures in each measured length:
 - a. 0.05730 meter
 - b. 8765 meters
 - c. 0.00073 meter
 - d. 40.007 meters
3. How many significant figures are in each measurement?
 - a. 143 grams
 - b. 0.074 meter
 - c. 8.750×10^{-2} gram
 - d. 1.072 meters
4. Round each measurement off to three significant figures. Write your answers in scientific notation:
 - a. 87.073 meters
 - b. 4.3621×10^8 meters
 - c. 0.01552 meter
 - d. 9009 meters
 - e. 1.7777×10^{-3} meters
 - f. 629.55 meters
5. Round each measurement in Problem 4 to one significant figure. Write each of your answers in scientific notation:
 - a.
 - b.
 - c.
 - d.
 - e.
 - f.

6. Perform each operation. Express your answers to the correct number of significant figures.
- a. $61.2 \text{ meters} + 9.35 \text{ meters} + 8.6 \text{ meters}$
 - b. $9.44 \text{ meters} - 2.11 \text{ meters}$
 - c. $1.36 \text{ meters} + 10.17 \text{ meters}$
 - d. $34.61 \text{ meters} - 17.3 \text{ meters}$
7. Find the total mass of three diamonds that have masses of 14.2 grams, 8.73 grams, and 0.912 grams
8. Solve each problem. Give your answers to the correct number of significant figures and in scientific notation.
- a. $8.3 \text{ meters} \times 2.22 \text{ meters}$
 - b. $8432 \text{ meters}^2 / 12.5 \text{ meters}$
 - c. $35.2 \text{ seconds} \times \frac{1 \text{ minute}}{60 \text{ seconds}}$
9. Calculate the volume of a warehouse that has measured dimensions of 22.4 meters by 11.3 meters by 5.2 meters. (Volume = $l \times w \times h$)