

Math

Sample Problem

Percent Error

You calculate the density of an object to be 9.37 g/cm^3 . The density of the object is actually 8.92 g/cm^3 . Calculate your percent error.

1 Read and Understand

What information are you given?

Experimental value = 9.37 g/cm^3

True value = 8.92 g/cm^3

2 Plan and Solve

What quantity are you trying to calculate?

Percent error =

What formula contains the given quantities and the unknown quantity?

$$\text{Percent Error} = \frac{\text{Difference between experimental value and true value}}{\text{True value}} \times 100\%$$

Perform the calculation.

$$\text{Percent Error} = \frac{9.37 \text{ g/cm}^3 - 8.92 \text{ g/cm}^3}{8.92 \text{ g/cm}^3} \times 100\%$$

$$\text{Percent Error} = 5.04\%$$

3 Look Back and Check

Does your answer make sense?

The answer tells you that your percent error is about 5%. This answer makes sense because the experimental value and the true value were close to each other.