Experiment on Measurement

Names

Density of Steel (Method 1)

In this activity you are expected to determine the density of steel by making accurate measurements of length and diameter on four (4) different sizes of cylinders.

Each member of the group must try taking the measurements and take note of these in the given data table below.

Later, you will compare your results with the theoretical density of steel.

A. Length

Mass of cylinder/g	Length of cylinder/cm			Average/cm

B. Diameter

Mass of cylinder/g	Diameter of cylinder/cm			Average/cm

C. Density

Mass of cylinder/g	Average length/cm	Average Diameter/cm	Volume/cm^3	Density/g cm^{-3}
Average density →				

D. The theoretical density of steel is 7.86 g cm^{-3}. Calculate the percentage error of your average experimental value using the formula:

$$\% \text{ Error} = \left| \frac{\text{Theoretical Value} - \text{Experimental Value}}{\text{Theoretical Value}} \right| \times 100$$

Show your solution below.

E. What are the probable sources of error? Give two.

1.

2.