

Lab 2: Determination of Relation between Units

Objective:

The purpose of this lab is to determine the relation between (a) inch and centimeter and (b) meter and foot.

Apparatus: Measuring tape and ruler (English and Metric system)

Procedure:

Inch and centimeter relation

1. Measure the shorter side of your notebook page or an envelope using an English ruler and express in inches. Make three independent measurements, record those in Table 1 and determine the average value
2. Make three independent measurements of the same object using a metric ruler, record those in the Table 1 and determine the average value.

Data and Result:

Table 1

Trial	Inches	Centimeters
1	5.25	13.4
2	5.28	13.5
3	5.22	13.5
Average	5.25	13.47

Number of centimeters in one-inch, calculated value: $13.47/5.25 = 2.56$

Number of centimeters in one-inch, accepted value: 2.54

$$\% \text{ Error: } \frac{(|2.56 - 2.54|) \times 100}{2.54} \% = 0.78\%$$

Meter and foot relation

1. Measure the longer side of the entrance door of your home/dorm using an English ruler and express in feet. Make three independent measurements, record those in Table 2 and determine the average value
2. Make three independent measurements of the same object using a metric ruler, record those in the Table 2 and determine the average value.

Table 2

Trial	Foot	meter
1	6.25	1.91
2	6.28	1.90
3	6.22	1.89
Average	6.25	1.90

Number of foot one-meter, calculated value: $6.25/1.90 = 3.29$

Number of centimeters in one-inch, accepted value: 3.28

$$\% \text{ Error: } \frac{(|3.29 - 3.28|) \times 100}{3.28} \% = 0.30\%$$

Important:

1. You must provide one screen shot of each type of measurement as shown below. Screen shot must show the numbers that you recorded in the table. So, you have to provide 2 screen shots.
2. All the data provided here is for demonstration purpose. You cannot use those data. Please delete those and put your own data.

