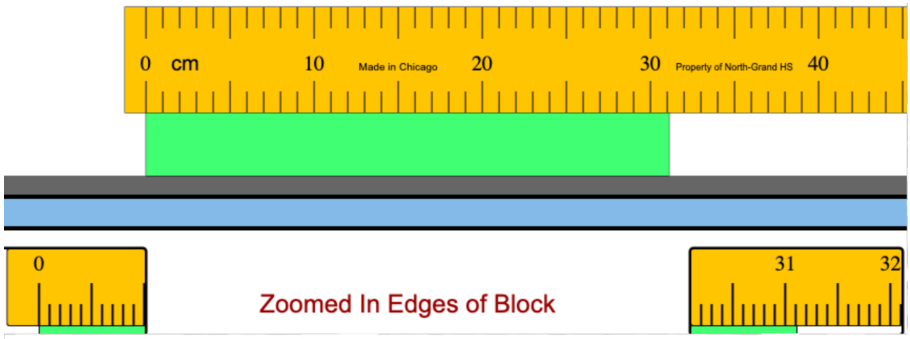
Online Lab: Measurement

Name: Date:

Instructor: Section:

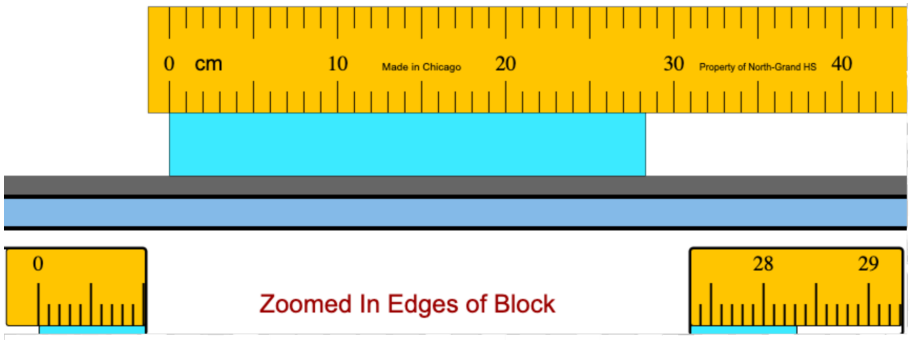
Measurements with a Meter Stick

Read and Record the length in *centimeters* and in *meters* in the blanks provided.



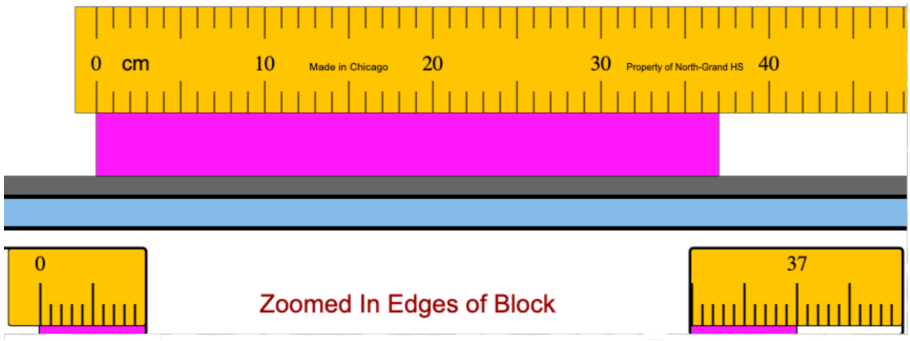
Record *cm* here:

Record *m* here:



Record *cm* here:

Record *m* here:

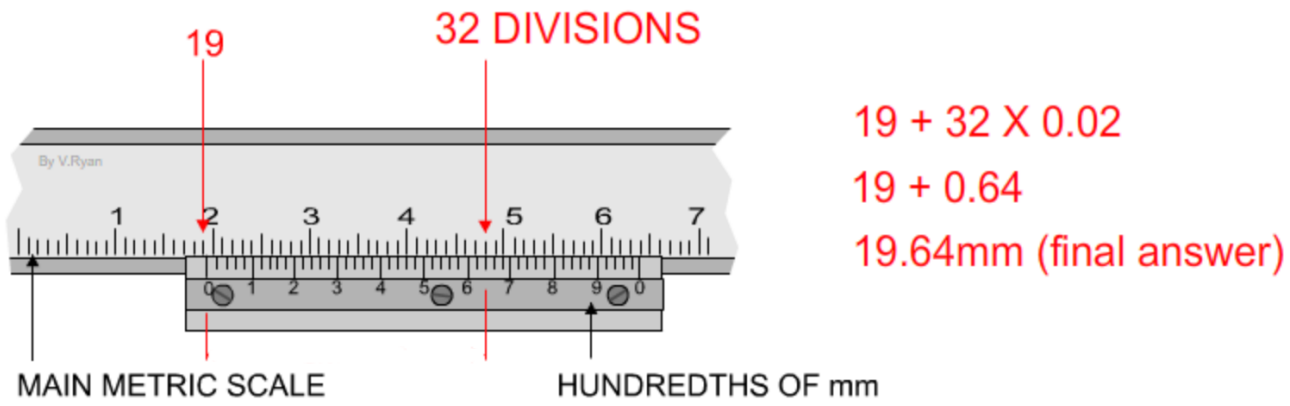


Record *cm* here:

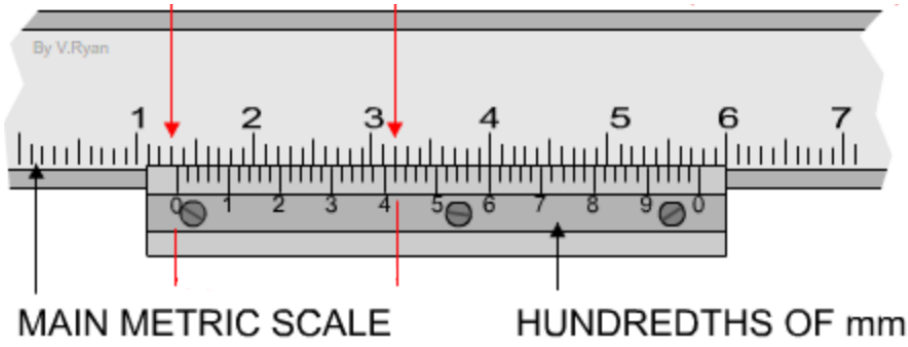
Record *m* here:

Measurements with a Vernier Caliper

In the example figure below, the first reading is 1.9 cm or 19 mm. The hundredths of mm or Vernier Scale is then read by counting the number of divisions until you get to the division that lines up with the main metric scale. This is 32 divisions on the hundredths scale. This 32 is multiplied by 0.02 giving 0.64 mm as the answer (Remember that each division on the hundredths scale is equivalent to 0.0 2mm). This means that the length we have measured corresponds to 19.64 mm.

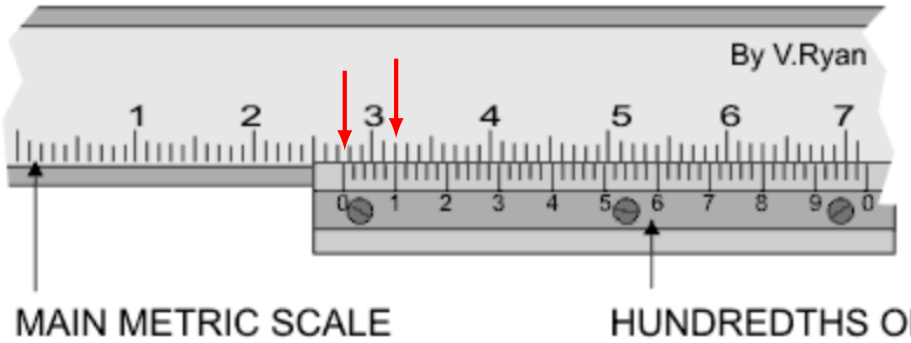


Read and Record the Verniers in *centimeters* and *millimeters* in the blank provided.



Record *cm* here: _____

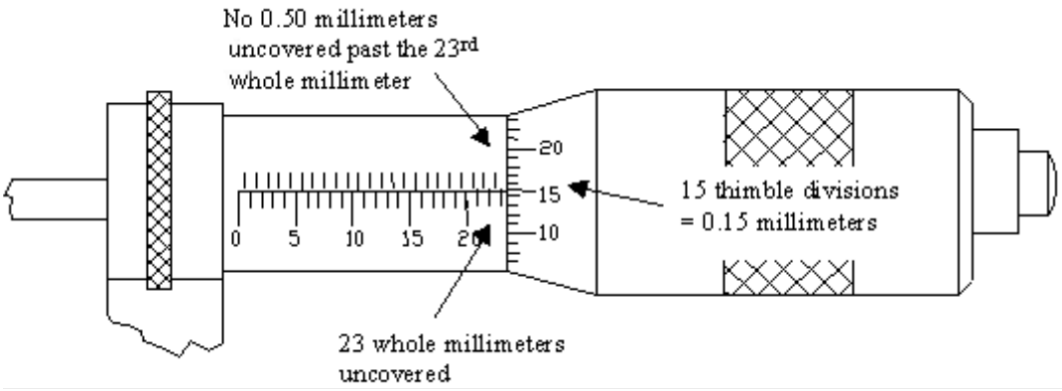
Record *mm* here: _____



Record *cm* here: _____

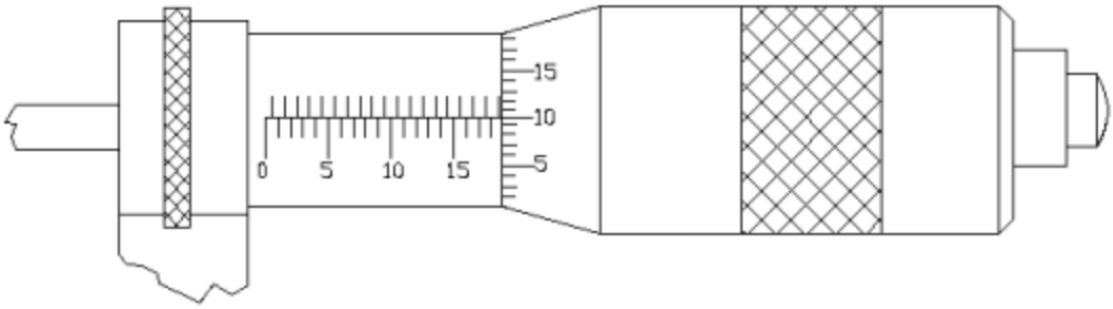
Record *mm* here: _____

Measurements with a Micrometer Caliper

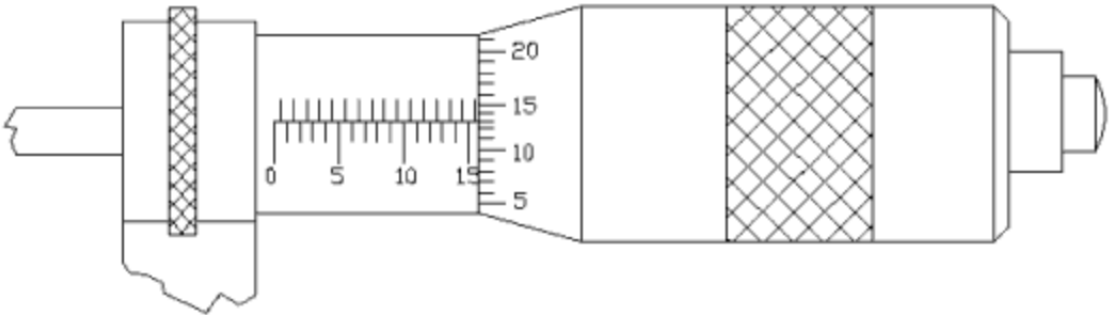


1. 23 whole divisions are uncovered = 23 millimeters
2. 0 half millimeter divisions are uncovered = 0 millimeters
3. 15 0.01 millimeter divisions line up on the thimble = 0.15 millimeters
4. Total Micrometer reading = 23.15 millimeters (mm)

Read and Record the micrometer screw gauges in *millimeters* in the blanks provided.



Record reading (mm):



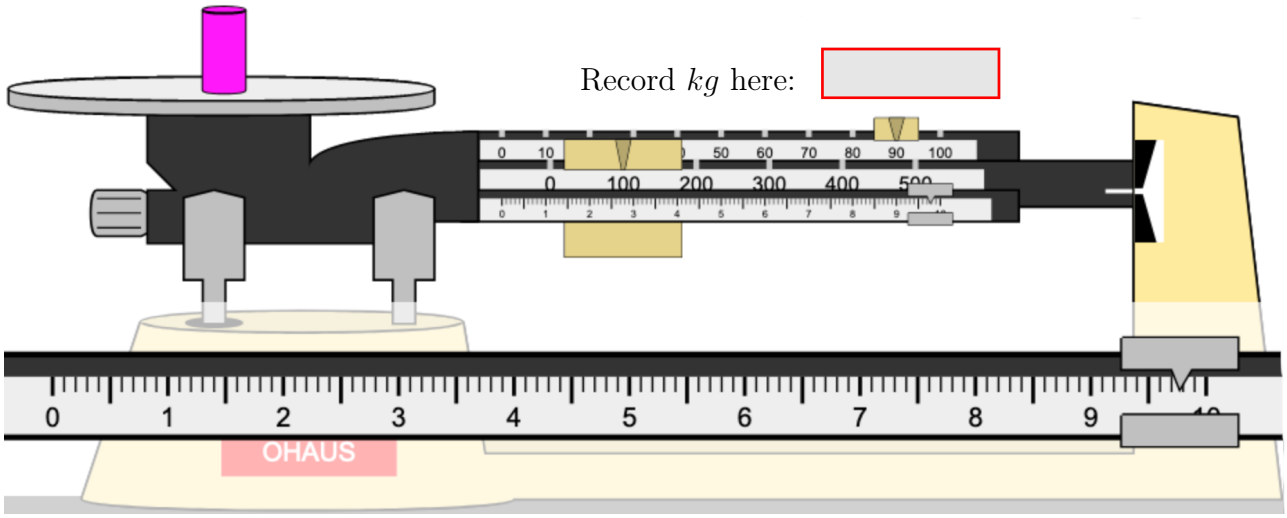
Record reading (mm):

Measurements with a Beam Balance

Two different objects are measured below. Read and Record the mass of each in both *grams* and in *kilograms* in the blanks provided.

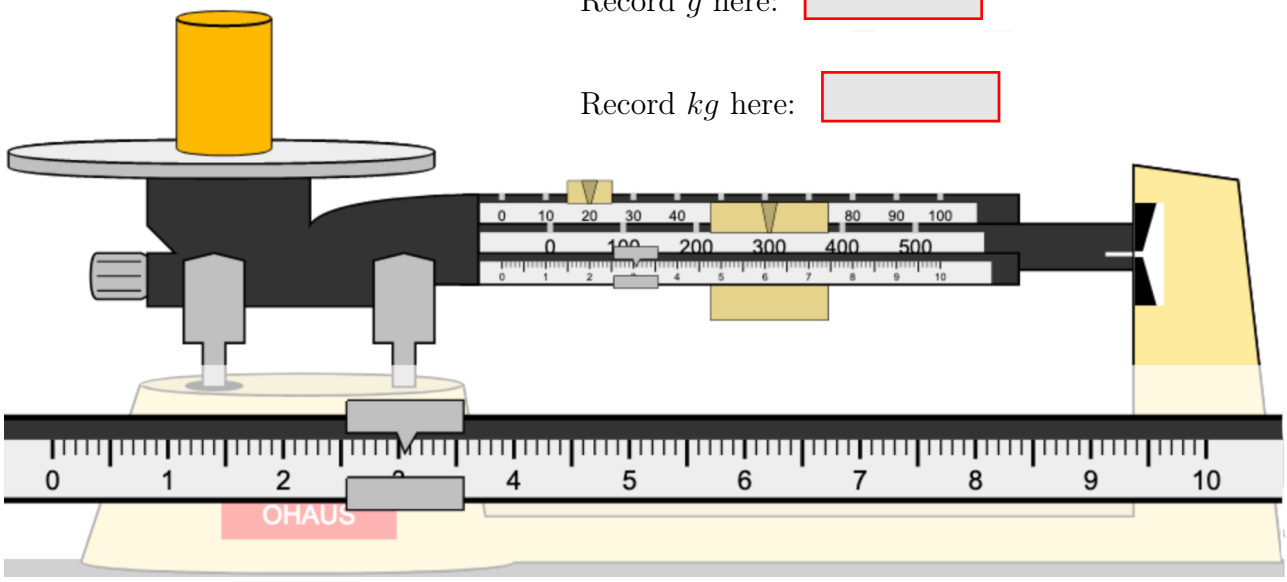
Record g here: _____

Record kg here: _____



Record g here: _____

Record kg here: _____



Wooden Block Measurements

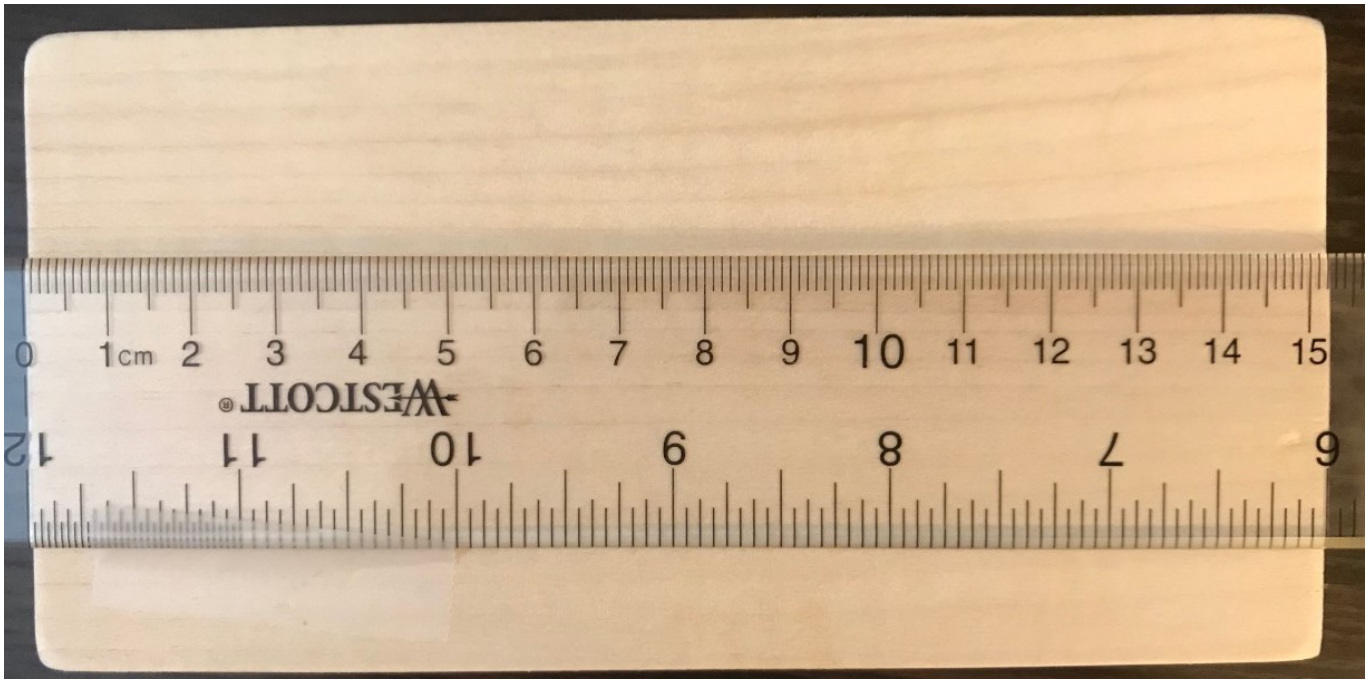


Figure 1: Block Length

Figure 2: Block Width

Figure 3: Block Height

Density Measurement

1. The length (L), width (W) and height (H) of a basswood block is shown in Figures 1-3 on page 5. Read and Record these measurement in centimeters in the blanks provided below.

   L: _____ W: _____ H: _____

2. Calculate the volume, V of the block. (Hint: $V = LWH$)

   Answer: _____

3. The measured mass, M of the block is 462.0 g. Calculate the density of the wooden block. $\rho_{wood} = M/V$ in g/cm^3.

   Answer: _____

4. Using your measured density of the block, ρ_{wood} and the accepted density of basswood, $\rho_o = 0.50$ gm/cm^3 determine the *% error* of your measurement?

   Answer: _____

5. Take a photo of **ALL** of your calculations and upload them in D2L with your Lab Report.