

Name: _____

Date: _____

Measurement Lab

Directions: By the end of this lab, you should be able to measure objects to the correct number of significant figures. Each lab station has a wide array of lab equipment out for you. For each item, write the information down below, **recording with the correct number of significant figures and units**. Note that each measuring device has a different amount of markings, and as such, will require a different amount of digits/decimals.



Figure 1: Note the different amount of markings on each of the rulers used for measuring in this lab. The Sargent-Welch ruler also uses cm.

Prelab Question 1: What does the word “precision” refer to in chemistry, and which of the rulers in figure 1 (seen above) is the most precise? Explain.

Prelab Question 2: Can you have a set of data be accurate but not precise? Alternatively, can data be precise but not accurate? Explain.

Part I: Distance- Measure the following using the pictures attached. Zoom in if needed.

The Penny



Length = _____



Length = _____



Length = _____

The Copper Wire



Length = _____



Length = _____



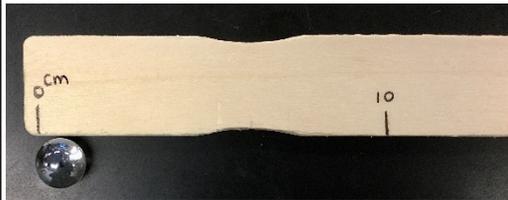
Length = _____

Name: _____

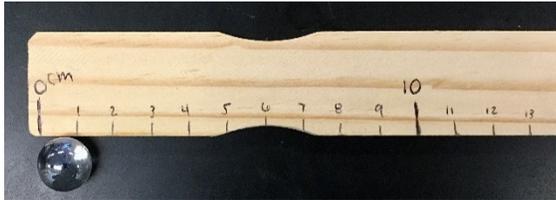
Date: _____

Measurement Lab

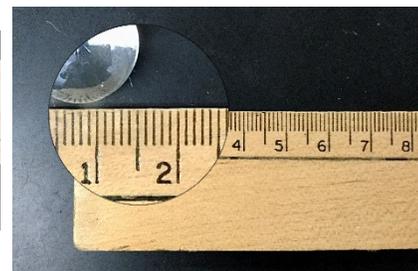
The Marble



Length = _____



Length = _____



Length = _____

The Red Container



Length = _____



Length = _____



Length = _____

Question #1: Say you meet a person who has never heard of significant figures before, and they are trying to measure the diameter of a dime with a 30 cm long ruler that only has markings at every 10 cm. Explain how their choice in rulers will impact the certainty of their measurement. (3 sentence minimum)

Name: _____

Date: _____

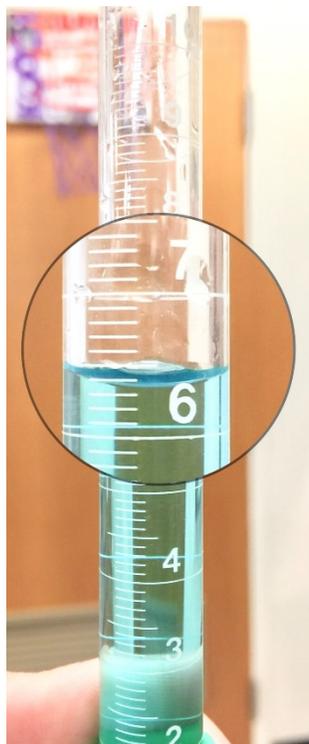
Measurement Lab

Part II: Volume and Mass- Measure each using correct units and significant figures.

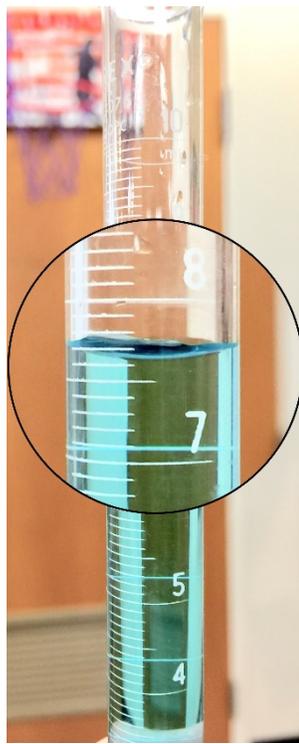
10 mL Graduated Cylinders



Volume = _____



Volume = _____



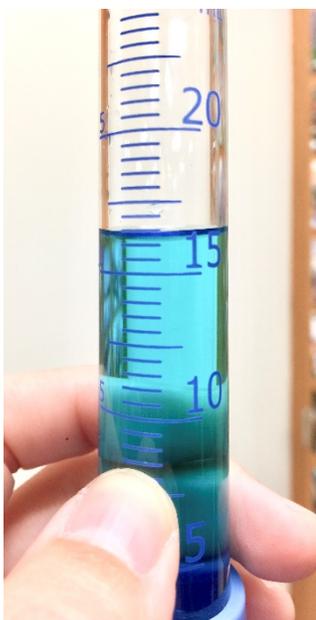
Volume = _____

25 mL Graduated Cylinder



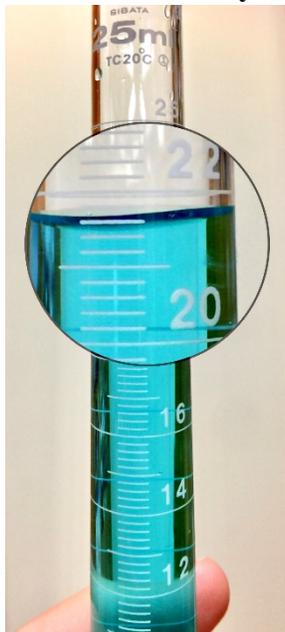
Volume = _____

25 mL Graduated Cylinder



Volume = _____

25 mL Graduated Cylinder



Volume = _____

50 mL Graduated Cylinder



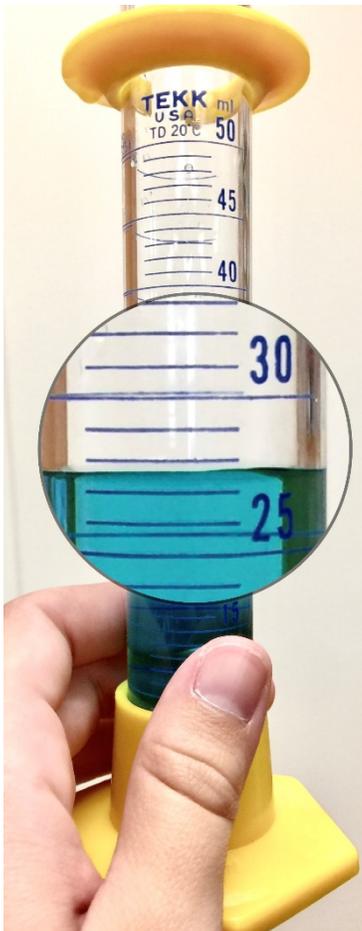
Volume = _____

Name: _____

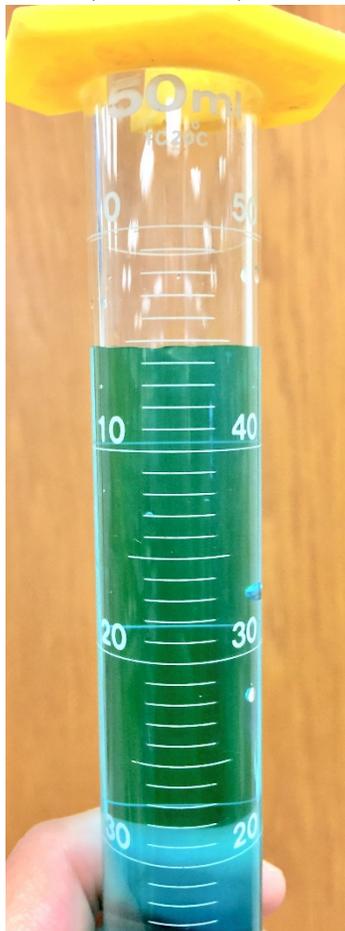
Date: _____

Measurement Lab

50 mL Graduated Cylinders (Continued)

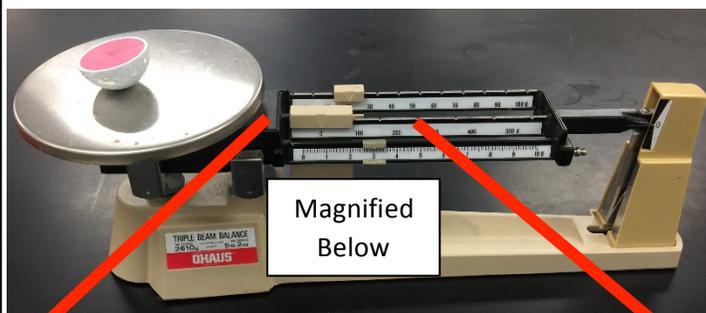


Volume = _____



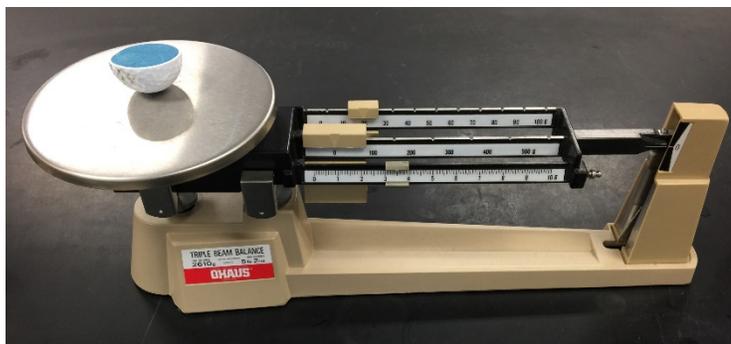
Volume = _____

Triple Beam Balance: Golf Ball A

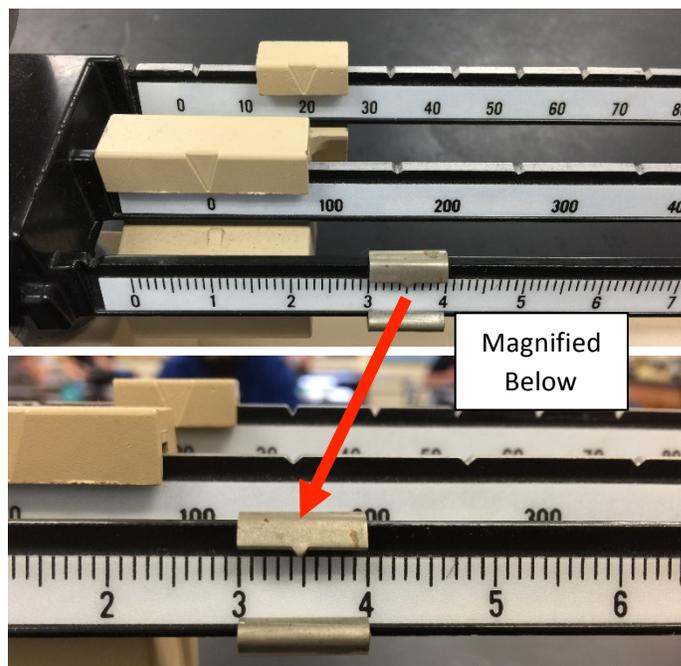


Mass = _____

Triple Beam Balance: Golf Ball B



Mass = _____



Name: _____

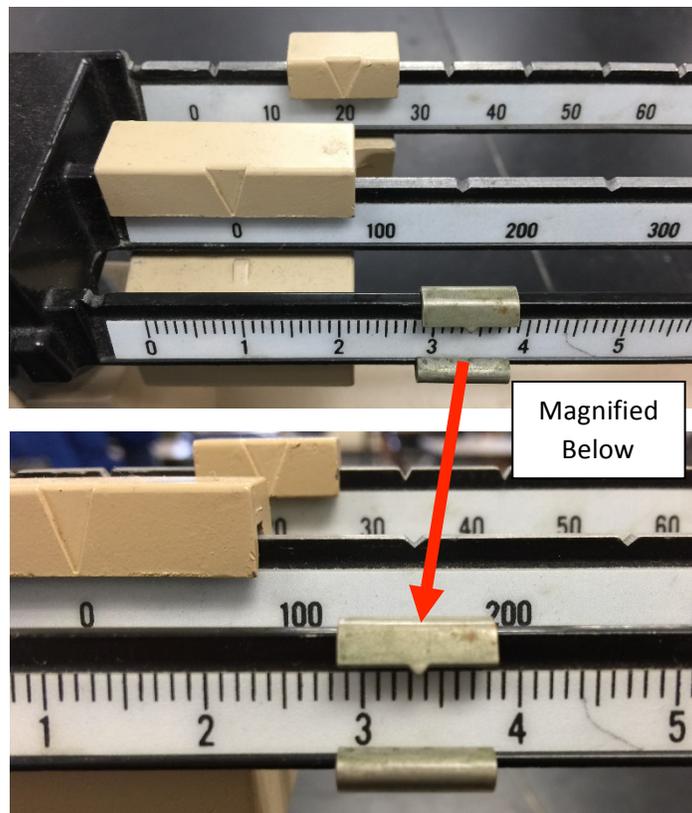
Date: _____

Measurement Lab

Triple Beam Balance: Golf Ball C



Mass = _____



Post Lab Question: Suppose you have a ruler with markings at every 10 cm, 1 cm and also every 0.5 cm. How many decimals would your numbers have if you measured with this ruler? Explain.