

Linear Measurements Lab

Name _____

Purpose:

Procedure: Rulers: Learn parallax reducing technique using a ruler. Learn why you never use the end of a ruler. Measure all data to maximum precision. Compute results, answer questions.

<u>Data:</u>	Length	Width	Thick- ness
Block #1			
Block #2			

Results:

Volume of Block #1 _____ cm³

Volume of Block #2 _____ cm³

(note unit change!)

Volume of Block #1 _____ m³

Volume of Block #2 _____ m³

Purpose:

Procedure: Calipers: Take all measurements two or three times - your calipers should be precise enough that your measurements are off by at most .01 cm. Measure all quantities asked for in the data table. Sometime in the **beginning** of the lab, have a reading checked by your instructor for accuracy. Calculate volumes and answer questions.

Data	Length	Width	Thick- ness
Al block			
Data	Length	dia- meter	
Small Cylinder			
Large Cylinder's hole			

Results:

Volume of block _____ cm³

Volume of small cylinder _____ cm³

Volume of hole _____ cm³

Conclusions: (Ruler)

1. How precise was your Ruler? (to what decimal place could you read?)

2. Why don't we use the ruler's end when measuring?

3. How did our technique cut down on parallax? Did it eliminate parallax?

4. How many cubic centimeters are in a cubic meter? How many mm^3 in a cm^3 ?

5. If a measurement lined up exactly with the 17 mm line, what do you write down for your reading to maximize precision?

6. What are two advantages of using rulers?

Conclusions: (Caliper)

1. How precise was your Caliper? (to what decimal place could you read?)

2. Differentiate between the terms precision and accuracy, giving examples.

3. What is parallax? Did it affect this lab? Why or why not?

4. Does the Vernier scale give you an extra digit of precision, or merely more confidence in your estimate? Explain.

5. What three ways can we measure with calipers?(NOT length, width, height)

6. What are two advantages of using Calipers?