

Lab 1 Data Sheet (attach answers to the lab questions)

Part 1 — Measurement and glassware

Glassware	100 mL beaker	10 mL graduated cylinder	Large graduated cylinder	Volumetric pipet
Volume of water added (<i>measured</i> volume) (mL)				
Mass without water (g) (can be avoided)				
Mass <i>with</i> water (g) (can be avoided)				
Mass <i>of</i> water (g)				
Temperature of water (°C)				
Density of water (CRC) (g/mL)				
<i>Calculated</i> volume of water in glassware (mL)				
% error between <i>meas.</i> and <i>calc.</i> volume				

Part 2 — Density of a metal

Metal cylinder letter		
Mass of metal cylinder (g)		
Diameter of metal cylinder (cm)		
Height of metal cylinder (cm)		
<i>Calculated</i> volume of metal cylinder (use $V = \pi r^2 h$) (cm ³)		
Density of metal based on the calculated volume (g/cm ³)		
Volume of water in grad. cyl. <i>before</i> immersion (mL)		
Volume of water in grad. cylinder <i>after</i> immersion (mL)		
<i>Measured</i> (displacement) volume of metal cylinder (mL)		
Density of metal based on the measured volume (g/mL)		
Density of metal (literature value) (g/cm ³ or g/mL)		
Percent error between literature value and calculated volume density		
Percent error between literature value and measured volume density		