Archimedes' Principle

As you work through the steps in the lab procedure, record your experimental values and the results on this worksheet. Use the exact values you record for your data to make later calculations.

For acceleration due to gravity, use $g = 9.81\ \mathrm{m/s^2}$.
For density of water, use $\rho = 1000\ \mathrm{kg/m^3}$.

Part 1. Archimedes' Principle - Data

Record the mass of the empty catch can.

For each of the objects used, record the following experimental data.

Table 1

Object	**Mass (catch can + water) (kg)**	**Volume of the displaced water ($\mathbf{m^3}$)**	**Weight of the object in the air (N)**	**Apparent weight (N)**
Rubber Stopper ($\rho_{\mathbf{object}} > \rho_{\mathbf{fluid}}$)				
Wood Cube ($\rho_{\mathbf{object}} < \rho_{\mathbf{fluid}}$)				

Part 2. Determine the density of the golf ball - Data

Record the following data, based on your measurements with the golf ball.

Table 2

Object	**Mass of the golf ball (kg)**	**Weight of the golf ball in the air (N)**	**Apparent weight of the golf ball (N)**
Golf Ball			

Part 3. What is the mass? - Data

Complete the table.

Table 3

Object	Mass of the golf ball (kg)	Mass of the 200 mL beaker and water (kg)	Prediction - the mass of the beaker, water, & submerged golf ball (kg)	Experimental mass of the beaker, water, & submerged golf ball (kg)
Golf Ball				

Files

Upload the file with your graphs. Do a print screen and save the graphs as a file with a maximum size of 1 MB. (*You will upload this file in the WebAssign question.*) Print the graph for your TA to sign, and for your reference.