Lab Session 10, Experiment 9: Charles' Law

The purpose of this experiment is to study the changes in the volume of a gas with changes in temperature at constant pressure.

9A Experiment

1. Use a thoroughly dried 125 mL Erlenmeyer flask for this experiment. If it is not dry, rinse the flask with a small amount of acetone or ethanol and place it upside-down on a paper towel to dry.

2. Fit the flask with a one-hole rubber stopper inserted with a short piece of dry glass tubing. Add rubber tubing to the end of the glass tube and assemble the apparatus as

8.

Report Form 9: Charles' Law

Name_____

Partner_____Section #_____

9A Experiment

(a) Volume of water forced into the flask	mL	
(b) Initial volume of the air (measured volume of the flask/stopper)	mL	
(c) Initial temperature of the air (temperature of the hot water)	°C	K
(d) Final temperature of the air (temperature of the water in the sink)	°C	K
(e) Final volume of the air [(b)–(a)] (measured volume of the flask minus the volume of water forced into the flask)	mL	

9B Exercise

(a) What was the experimental final volume?	mL
(b) According to Charles' Law, what should have been the final volume?	mL
(c) What is the difference between the experimental and calculated volumes?	mL
(d) Assuming the calculated volume to be correct, determine the percent error of the experiment.	%