LAB: Determination of a Chemical Formula (Slowinski Exp. #4)

- Write the title, purpose, & procedure on a separate sheet of paper

Pre- Lab Question:

In a certain compound of copper and oxygen, Cu_xO_y, we find that a sample weighing 0.5424g contains 0.4831 g Cu.

a) How many grams of oxygen are in the sample? $0.5424\text{ g } Cu_xO_y - 0.4831\text{ g Cu} = 0.0593\text{ g O}$

b) What is the empirical formula for this copper oxide? *(Show all work. Keep all necessary significant figures until you write your final empirical formula.)*

$$0.4831\text{ g Cu} \times \frac{1\text{ mol Cu}}{63.55\text{ g Cu}} = 0.007602\text{ mol Cu} \div 0.00371 = 2.05\text{ mol Cu}$$

$$0.0593\text{ g O} \times \frac{1\text{ mol O}}{16.0\text{ g O}} = 0.00371\text{ mol O} \div 0.0371 = 1.00\text{ mol O}$$

Emprical Formula: Cu_2O

c) What is the molar mass of this copper oxide? $2(63.55\text{ g}) + 16.00\text{ g} = 143.1\text{ g/mol}$