Moles of Iron and Copper

Read through the lab handout **PRIOR** to completing the following questions.

Name - _____

Partner - _____

Pre-lab Questions –

1.) How many moles are present in a sample of $34.0\ grams$ of iron metal?

2.) How many grams of copper do you have if you have $2.779\ moles$ of the metal?

3.) How many atoms of iron metal do you have in $1.03\ moles$?

4.) What is the molar mass of the compound copper (II) chloride?

5.) Why is the washing of the copper necessary in this experiment?

6.) Define the term decant.

7.) What is the other name for mole (6.022×10^{23})? _____

8.) In today's market, a copper containing ore of _____% copper is considered high grade.

9.) Which two chemicals in this lab pose significant health risks and what are those risks?

a.)

b.)

Part 1 – Day 1

Purpose – to practice laboratory techniques, measurement, and stoichiometry calculations in an effort to gather information to allow the calculation of moles of copper (product) produced. Use the moles of copper produced to allow the mole ratio of iron reactant to copper product to be discovered.

Procedure – follow the procedure as outlined on your lab handout.

Data and Observations – record the followings pieces of data to aid in answering the purpose.

1.) Mass of clean and dry $250\ mL$ beaker.

2.) Mass of beaker with copper (II) chloride added.

4.) Mass of two cleaned nails

5.) Record what you see happening during the first few minutes after the nails are added to the copper (II) chloride solution.

7.) Mass of nails after reaction with the copper (II) chloride solution.

12.) Mass of beaker with copper metal.