

Name: \_\_\_\_\_

Section: \_\_\_\_\_

**Data and Calculations for Experiment 1**

Mass of  $\text{CuSO}_4$ /sand mixture \_\_\_\_\_

Mass of empty evaporating dish \_\_\_\_\_

Mass of evaporating dish and dry  $\text{CuSO}_4$  \_\_\_\_\_

Mass of  $\text{CuSO}_4$  \_\_\_\_\_

Mass of filter paper \_\_\_\_\_

Mass of filter paper and sand \_\_\_\_\_

Mass of sand \_\_\_\_\_

Total mass of recovered sand and  $\text{CuSO}_4$  \_\_\_\_\_

Calculated total percent recovery \_\_\_\_\_

Percent by mass of  $\text{CuSO}_4$ :

Show Calculation \_\_\_\_\_

Percent by mass of sand:

Show Calculation \_\_\_\_\_

**Questions**

1. Many students do NOT recover 100% of the original mixture. Describe at least TWO possible problems that could cause LESS than 100% recovery of the mixture.

2. A student obtained the following data:

Mass of beaker	25.87 g
Mass of beaker with mixture sample	28.12 g
Mass of evaporating dish	146.36 g
Mass of evaporating dish with dried salt	147.10 g
Mass of beaker with dried sand	???

However, this student spills her sand sample out of the evaporating dish before weighing it. If the student believes in the Law of Conservation of Mass, what should have been the weight of the beaker with the dried sand in it? Show all your work.

3. A student receives a sample of a mixture with three components: (1) solid iodine that is first removed from the mixture by evaporation, (2) solid salt that is dissolved to separate it from the third component, and (3) solid sand. The salt and sand are dried and weighed, but the iodine escapes as a gas and is not recovered. The student starts with 4.25 g of the mixture and recovers 1.16 g of salt and 2.40 g of sand. What is the percent of each component in the original mixture? Show all your work.