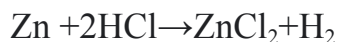


**Chemistry 0 Week 12 HW**  
**Assigned on 01/09/2022    Due date: 01/15/2022**

1. A wet 43.2 g sample of copper sulfate heptahydrate ( $\text{CuSO}_4 \cdot 7\text{H}_2\text{O}$ ) is heated until only copper sulfate ( $\text{CuSO}_4$ ) remains. The mass of the water lost is 34.1 g. What is the mass of the copper sulfate?
2. A 13.5 g sample of calcium carbonate is heated until it decomposes completely to calcium oxide and carbon dioxide. After measurement, we learn that 7.6 g of calcium oxide is produced. What is the mass of carbon dioxide produced?
3. A reaction occurs in a beaker between zinc metal and diluted hydrochloric acid to form zinc chloride and hydrogen gas according to the following balanced equation:



Why is there a decrease in the mass when you measure the leftover in the beaker?

- A. The reactants decompose.
- B. Zinc metal is a limiting reactant.
- C. Hydrogen gas escapes.
- D. Zinc metal precipitates.

Please choose the correct answer: \_\_\_\_\_.

4. What is the rate of reaction?
  - A. How fast a reaction is
  - B. How loud a reaction is
  - C. How big a reaction is
  - D. How much gas a reaction produces

Please choose the correct answer: \_\_\_\_\_.

5. How can you set up an experiment to find out if the temperature of the reactants affects the speed of the reaction? Please explain your proposal of the experiment below.