Chemistry 110 Capstone Practice Lab

In this "capstone" experiment you will react a known amount of two different substances. You will predict how much of the product will be formed and compare this with that amount of product obtained experimentally. To help you prepare for the lab, you will complete this practice lab which is similar to the actual experiment you will be performing in the lab. This experiment will be worth 50 points.

A student weighed and recorded the mass of an evaporating dish and Zn according to the procedure below:
Measure, and record, the mass of a clean and dry evaporating dish.

1. **Add 2.0 to 2.5 grams of Zinc and record the mass of the Zn and dish. Record this data in the table below.**
2. **Calculate the mass of** Zn **used. From the mass of** Zn **you weighed out, calculate the volume (ml) of 2.00 M hydrochloric acid you will need to use to react all of the Zn, and calculate the (theoretical) mass of the Zinc chloride you will produce.**

Mass of evaporating dish	25.21 g
Mass of dish and Zn	27.16 g
Mass of Zn used	

A) Calculate the mass of the Zn the student used:

Answer_____

Below write the balanced equation for the reaction between hydrochloric acid zinc showing all states Give complete setups of our calculations in the spaces below :
Balanced equation:

B) Using the mass of zinc you weighed out, calculate the volume (ml) of the 2.00 M hydrochloric acid solution that will be used:

Answer_____

C) Using the mass of zinc you weighed out, calculate the mass of the zinc chloride product that will be made:

Answer_____

3. **The student performed the experiment by reacting the zinc and HCl in a beaker and then evaporating the water in an evaporating dish over a steam bath. In the table below are the results the student obtained**

Mass of dish and product 1st heating	30.26 g
Mass of dish and product 2nd heating	29.41 g
Mass of dish and product 3rd heating if necessary	29.35 g
Mass of dish and product 4th heating if necessary	

Using the above data and results, perform the following calculations

1. Calculate the mass of solid zinc chloride produced

Answer_____

2. Calculate the difference(error) between the predicted (theoretical) amount of zinc chloride and the actual (experimental) amount of zinc chloride produced.

Answer_____

3. Calculate the percent difference(percent error).

Answer_____