Questions

1. Why is it important that the same thermometer be kept in the calorimeter for the entire experiment? (Hint: Suppose that thermometer A reads 1.0 °C low for all readings near room temperature; and suppose that thermometer B reads 1.0 °C high for all readings near room temperature. Would there be a significant error in your value of $(t_{2w} - t_{1w})$ if you used thermometer A to measure both t_{2w} and t_{1w}? Would there be a significant error in your value of $(t_{2w} - t_{1w})$ if thermometer B were used to measure t_{2w} and thermometer A were used to measure t_{1w}?)

2. If there were significant amounts of heat lost by radiation from the sample and from the calorimeter to the environment, would this problem cause your measured value of c_s to be higher or lower than it should be?

3. If some drops of boiling water were carried over to the calorimeter with the metal sample, would this problem cause your measured value of c_s to be higher or lower?