

Due on Saturday morning at 10am.

## 1 Melting ice lab questions

*None* These questions relate to the in-class activity where you put ice (prepared at zero degree celcius) into some warm water. You insulated the ice and water inside nested polystyrene cups and closed the lid. You waited a few minutes for the system to reach equilibrium. At equilibrium, all the melted ice and water were at the same temperature. During class, you started to calculate a prediction for this final temperature.

- (a) **Prediction** What is your prediction for the final temperature? List the measured quantities that you used in your calculation. Show your work.
- (b) **Measurement** What final temperature did you measure? Comment on the magnitude and sources of errors in your experiment and in your prediction.
- (c) **Change in entropy** Calculate the total change in entropy that occurred during the overall process. *Initial state:* warm water and ice. *Final state:* cool water at a uniform temperature.