Physics 115 – Section 0101
Homework #8
Due April 8, 2008

Essay 1, 10 points
Suppose you are given a block of solid wax which is at room temperature. Describe how you would do an experiment to measure the specific heat of the wax, using things that might be in the 115 laboratory.

Essay 2, 10 points
Suppose the block of wax in Essay 1 melts at 45°C. Describe how you would do an experiment to measure the latent heat of the wax melting, using things that might be in the 115 laboratory.

Problem 1, 10 points
You mix 100g of ice at 0°C and 100g of hot water at 55°C. Describe the resultant mixture after it comes to equilibrium: What is the temperature? How much ice is there?

Problem 2, 10 points
How much hot water at 55°C do you need to add to 100g of ice at 0°C to end up with water at 20°C?

Problem 3 10 points
How much steam at 110 °C do you need to add to 50g of ice at -10°C to end up with an ice water mixture containing 10g of ice? What would your answer be if you end up with water at 20°C?

Essay 3
Explain why steam burns are more dangerous than water burns?