

## Chemistry 11

### Practice on Heat Calculations

The following data were obtained in an experiment designed to determine the heat of fusion of ice. Use the data to do the calculations below:

1	Mass of Empty Styrofoam Cup	1.79 g
2	Mass of Cup and Warm Water	104.57 g
3	Initial Temperature of Warm Water	42 °C
4	Final Temperature of Water	18 °C
5	Final Mass of Cup and Contents	131.85 g

Calculations:

1. Calculate the mass of the original warm water in the cup in grams and kilograms

\_\_\_\_\_ g

\_\_\_\_\_ kg

2. Calculate the temperature change ( $\Delta T$ )

\_\_\_\_\_ °C

3. Calculate the mass of the ice cube in grams and kilograms

\_\_\_\_\_ g

\_\_\_\_\_ kg

4. Calculate the total heat lost by the original warm water in the cup. ( $C_{H_2O} = 4180 \text{ J/Kg} \cdot ^\circ\text{C}$ )

\_\_\_\_\_ J

5. Calculate the heat used to warm the ice water from 0 °C to the final temperature.  
( $C_{H_2O} = 4180 \text{ J/Kg} \cdot ^\circ\text{C}$ )

\_\_\_\_\_ J

6. Calculate the heat used to melt the ice cube.

\_\_\_\_\_ J

7. Calculate the heat of fusion of ice in J/Kg

\_\_\_\_\_ J/Kg