

## Quiz 12

Name: \_\_\_\_\_

1. A 5 kg block of ice is initially at  $-65^{\circ}\text{C}$  and then combined with 1 kg of boiling water. What is the final temperature of the system, what is the final mass of ice, what is the final mass of water?  $c_{\text{water}} = 4,186 \text{ J/kgK}$ ,  $c_{\text{ice}} = 2,090 \text{ J/kgK}$ ,  $c_{\text{steam}} = 2,010 \text{ J/kgK}$ ,  $L_f = 3.33 \times 10^5 \text{ J/Kg}$ ,  $L_v = 2.26 \times 10^6 \text{ J/kg}$

$$T_C = T - 273.15^{\circ}\text{C} \quad T_F = (9^{\circ}\text{F}/5^{\circ}\text{C}) T_C + 32^{\circ}\text{F}$$
$$Q = Mc\Delta T \quad Q = \pm ML_f \quad Q = \pm ML_v$$