**Quiz 10**

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

1. In winter why did pioneers store an open barrel of water alongside their produce?
2. A student measures the following data in a calorimetry experiment designed to determine the specific heat of a chunk of aluminum (their calorimeter is *not* made of aluminum):

Initial temperature of water and calorimeter: 70oC

Mass of water: 0.400 kg

Mass of calorimeter: 0.040 kg

Specific heat of calorimeter: 630 J/kgoC

Initial temp of aluminum: 27oC

Mass of aluminum: 0.200 kg

Final temperature of mixture: 66.3oC

Use these data to determine the specific heat of aluminum. Explain whether your result is within 15% of the expected value of 900 J/kg oC.

1. A 5 kg block of ice is initially at -65 oC 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? cwater = 4186 J/kgoC, cice =2090 J/kgoC, Lf=3.33 x 105J/Kg, Lv = 2.26 x 106J/kg

Q = mcT Q = mL