# Heat Questions

1. Convert the following temperatures into Kelvin.
   a) -273 $^0$C
   b) 112 $^0$C
   c) -40 $^0$C
   d) 0 $^0$C
   e) 22 $^0$C
   f) 100 $^0$C
   g) 6034 $^0$C

2. Assuming the values
   $c_{water}$ = 4.2 kJ/(K kg)
   $L_f$ = 334 kJ/kg
   $c_{ice}$ – 2.1 kJ/(K kg)
   $L_v$ = 2258 kJ/kg
   $c_{steam}$ = 1.996 kJ/(K kg)

   Find the energy required to heat 5 kg of ice from a temperature of -50 $^0$C to steam at a temperature of 110 $^0$C. Include a heating curve in your answer.

3. Find the mass of a sample of ice if it takes 13 kJ of energy to heat it from -3 $^0$C to 22 $^0$C. Include a heating curve in your answer.

4. 4 L of water at 10 $^0$C is mixed with 1 L of water at 75 $^0$C. What is the final temperature of the water, assuming that it is thoroughly mixed?