Introduction to Natural Science, Winter 2007
Chemistry Workshop – Week 10

1. Define the following terms.
   - exothermic reaction
   - endothermic reaction
   - extensive property
   - intensive property
   - energy
   - system
   - surroundings
   - thermal equilibrium

2. Draw energy diagrams to indicate the energy changes in exothermic and endothermic reactions.

3. The specific heat capacity of silver is 0.24 J °C^{-1} g^{-1}.

   - calculate the energy required to raise the temperature of 150.0 g of silver from 273 K to 298 K.

   - calculate the energy required to raise the temperature of 1.0 mol of silver by 1.0 °C (called the *molar* heat capacity of silver)

   - if it takes 1.25 kJ of energy to heat a sample of pure silver from 12.0 °C to 15.2 °C, calculate the mass of the sample of silver.

4. It takes 585 J of energy to raise the temperature of 125.6 g of mercury from 20.0 °C to 53.5 °C. Calculate the specific heat capacity and the molar heat capacity of mercury .