**SI WORKSHEET 14**

1. H2O(g)🡪 H2O(s) ⍙H=?
   1. Is this process endo or exothermic?
   2. How much energy is released/absorbed if 50 g of water is originally at 130oC and cools at -20oC (⍙Hfusion = 333 J/g and ⍙Hvaporation =2260 J/g)
2. 50g of Ethanol (C2H5OH) is heated from -20oC to its boiling point of 78oC. How much energy is released or absorbed in this process? (ethanol melts at -114oC and its heat of vaporization and heat of fusion are 38.6kJ and 4.9kJ, respectively.)
3. C4H10(g) + O2(g) 🡪 CO2(g) + H2O(g) ⍙H=? \*hint use book: Appendix J
   1. What is ⍙H?
   2. What is ⍙H if only one mole of CO2 is formed?
   3. If 100 grams Oxygen used?
4. Target reaction: CaCO3 🡪 CaO + CO2  ⍙H=?
   1. C + O2 🡪 CO2 ⍙H= -393.5 kJ
   2. Ca + O2🡪 CaO ⍙H= -635.1 kJ
   3. Ca + C + O2🡪 CaCO3 ⍙H= -1206.9 kJ
5. Target reaction: C3H8 + O2 🡪 CO2 + H2O ⍙H=?
   1. C(s) + H2 🡪 C3H8 ⍙H= -103.8 kJ
   2. H2 + O2 🡪 H2O (g) ⍙H= -241.8 kJ
   3. C + O2 🡪 CO2 ⍙H= -393.5 kJ
6. Sr + C + O2 🡪SrCO3(s) ⍙H=?
   1. Sr + O2 🡪SrO ⍙H= -592 kJ
   2. SrO + CO2 🡪 SrCO3 ⍙H= -234 kJ
   3. C + O2 🡪 CO2 ⍙H= -393.5 kJ
7. OF2 + H2O(g) 🡪HF(g) + O2 ⍙H=?
   1. The standard molar enthalpy of formation of OF2 is 18kJ/mol, calculate the standard molar enthalpy change for the reaction.