Enthalpies of Formation Demo Problem

1. A thermite reaction is a explosive demonstration of energy. The highly exothermic reaction is used for welding massive units, such as propellers for large ships. **Using enthalpies of formation in Appendix C, calculate the ΔH for this reaction.**

__Fe_2O_3(s) + __Al(s) → __Al_2O_3(s) + __Fe(s)   ΔH = ?
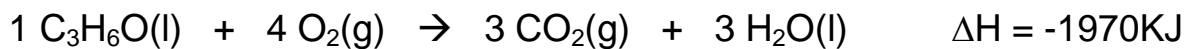
Enthalpies of Formation for:

Fe_2O_3(s)   _____

Al(s)   _____

Al_2O_3(s)   _____

Fe(s)   _____

(b) How much heat is produced when 8 g of iron (III) oxide is used?

2. Complete combustion of 1 mole of acetone, C_3H_6O, results in the liberation of 1790 kJ. Using this information, together with data from, Appendix C, calculate the enthalpy of formation of acetone.
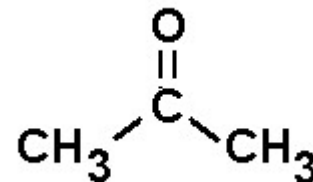
$$1 \ C_3H_6O(l) \ + \ 4 \ O_2(g) \ \rightarrow \ 3 \ CO_2(g) \ + \ 3 \ H_2O(l) \qquad \Delta H = -1970 KJ$$

Enthalpies of Formation for:

$C_3H_6O(l)$ _____?_____

$O_2(g)$ _____

$CO_2(g)$ _____

$H_2O(l)$ _____

Calculate the enthalpy of formation of acetone.