Heat of Formation and Heat of Combustion Groupwork Name _____

Write equations showing the **heat of formation** of the following compounds. Be sure to include the states of matter and include the energy term (kJ) in the equation, on the correct side. Some equations may need fractional coefficients to end up with one mole of product. Use your thermochemical reference handout.

1) _____ → $HBr_{(g)}$ _____

2) _____ → $CuO_{(s)}$ _____

3) _____ → $COCl_{2\,(g)}$ _____

4) _____ → $Fe_2O_{3\,(s)}$ _____

5) _____ → $C_3H_{8\,(g)}$ _____

6) _____ → $NaOH_{(s)}$ _____

Write equations showing the heat of combustion of the following substances. Be sure to include states of matter and include the energy term (kJ) in the equation, on the correct side. Some equations may need fractional coefficients to end up with one mole of fuel. Use your thermochemical reference HO.

7) $CH_{4\,(g)}$ _____

8) $C_2H_{6\,(g)}$ _____

9) $C_4H_{10\,(l)}$ _____

10) $C_6H_{14\,(l)}$ _____

11) $C_3H_{8(\,g)}$ _____

HESS'S LAW REVIEW MASTER EQ: $CO_2 \rightarrow C + O_2$ ΔH = _____ ????

Given:

$C_2H_6 \rightarrow 2C + 3H_2$ ΔH = +191 kJ _____

$2CO_2 + 3H_2O \rightarrow C_2H_6 + 3.5O_2$ ΔH = -3511 kJ _____

$H_2O \rightarrow H_2 + 0.5O_2$ ΔH = +643 kJ _____

Rewrite:

→
→
→

_____

Flip over for bookwork:

Bookwork: page 522 (#1 and #3)

page 531 (#4 and #6)