



HESS'S LAW 1 - FORMATION

$$1 \quad \Delta H = [\text{Sum } \Delta H_f \text{ products}] - [\text{Sum } \Delta H_f \text{ reactants}]$$

$$\begin{aligned} a) \quad \Delta H &= [-348 - 393] - [-812] &= +71 \text{ kJ/mol} \\ b) \quad \Delta H &= [2(-393)] - [2(-111) + 0] &= -564 \text{ kJ/mol} \\ c) \quad \Delta H &= [-1669] - [-822] &= -847 \text{ kJ/mol} \\ d) \quad \Delta H &= [2(-393) + 2(-286)] - [S_2 + 0] &= -1410 \text{ kJ/mol} \\ e) \quad \Delta H &= [2(-111) + 2(-286)] - [S_2 + 0] &= -846 \text{ kJ/mol} \end{aligned}$$

$$\begin{aligned} 2 \quad -623 &= [2(-286) + 0] - [\Delta H_f + 0] \\ \Delta H_f &= 2(-286) + 623 &= +51 \text{ kJ/mol} \end{aligned}$$

$$\begin{aligned} 3 \quad -137 &= [\Delta H_f] - [S_2 + 0] \\ \Delta H_f &= S_2 - 137 &= -85 \text{ kJ/mol} \end{aligned}$$

$$4 \quad \Delta H = [0 - 1117] - [0 + 4(-242)] = -149 \text{ kJ/mol}$$

$$\begin{aligned} 5 \quad 301 &= [-217 + 2(33) + 0] - [\Delta H_f] \\ \Delta H_f &= -217 + 2(33) - 301 &= -452 \text{ kJ/mol} \end{aligned}$$

$$6 \quad \Delta H = [-318] - [-248 + 0] = -70 \text{ kJ/mol}$$