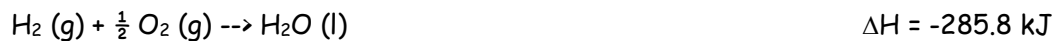
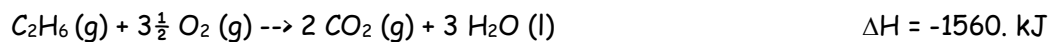
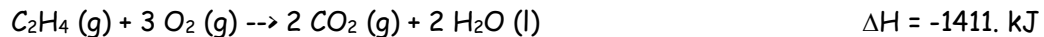


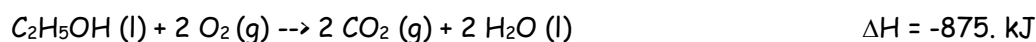
1. Calculate  $\Delta H$  for the reaction:  $C_2H_4(g) + H_2(g) \rightarrow C_2H_6(g)$ , from the following Data.



2. Calculate  $\Delta H$  for the reaction  $4 NH_3(g) + 5 O_2(g) \rightarrow 4 NO(g) + 6 H_2O(g)$ , from the following Data.



3. Find  $\Delta H^\circ$  for the reaction  $2H_2(g) + 2C(s) + O_2(g) \rightarrow C_2H_5OH(l)$ , using the following thermochemical data.



4. Calculate  $\Delta H$  for the reaction  $\text{CH}_4(\text{g}) + \text{NH}_3(\text{g}) \rightarrow \text{HCN}(\text{g}) + 3 \text{H}_2(\text{g})$ , given:



5. Calculate  $\Delta H$  for the reaction  $2 \text{Al}(\text{s}) + 3 \text{Cl}_2(\text{g}) \rightarrow 2 \text{AlCl}_3(\text{s})$  from the data.

