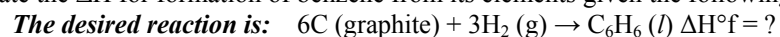
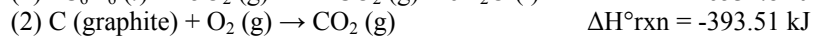
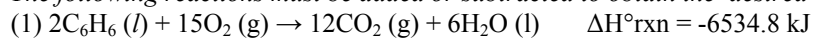


Example: Calculate the  $\Delta H$  for formation of benzene from its elements given the following information:



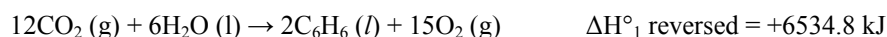
The following reactions must be added or subtracted to obtain the desired reaction.



reaction (1) has  $\text{C}_6\text{H}_6(\text{l})$  as a reactant... so reverse it

reaction (2) has  $\text{C (graphite)}$  as a reactant ... so do not reverse

reaction (3) has  $\text{H}_2(\text{g})$  as a reactant... so do not reverse



need 1 mol of  $\text{C}_6\text{H}_6(\text{l})$ , so multiply reaction (1) by  $\frac{1}{2}$

need 6 mol of  $\text{C (graphite)}$ , so multiply reaction (2) by 6

need 3 mol of  $\text{H}_2(\text{g})$ , so multiply reaction (3) by 3

