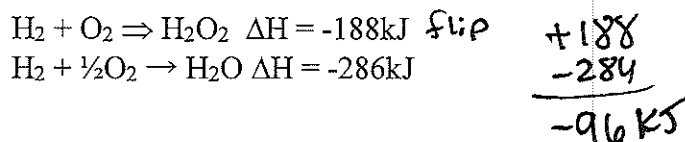


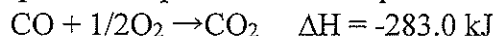
Name  
Hess's Law

1. (Brady257) Hydrogen peroxide,  $\text{H}_2\text{O}_2$ , decomposes into water and oxygen by the following equation:  $\text{H}_2\text{O}_2(\text{l}) \Rightarrow \text{H}_2\text{O}(\text{l}) + 1/2\text{O}_2(\text{g})$  Determine the  $\Delta\text{H}$  for the reaction with the following information.

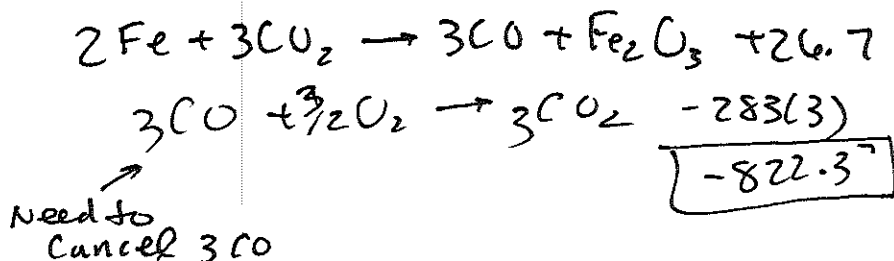
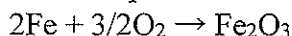


2. (Brady259) Carbon monoxide is often used in metallurgy to remove oxygen from metal oxides and thereby give the free metal. The thermochemical equation from the reaction of CO with iron (III) oxide is:  $\text{Fe}_2\text{O}_3 + 3\text{CO} \rightarrow 2\text{Fe} + 3\text{CO}_2 \quad \Delta\text{H} = -26.7\text{kJ}$

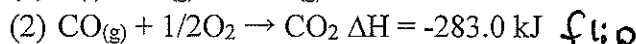
Use the previous equation and the equation for the combustion of CO for the following question.



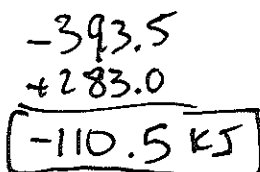
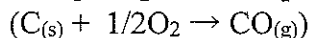
With the previous reactions calculate the  $\Delta\text{H}$  for the following reaction:



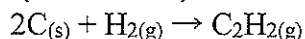
3. (Brown165) The enthalpy of Combustion of C to  $\text{CO}_2$  is  $-393.5\text{kJ/mol}$ , and the enthalpy of combustion of CO to  $\text{CO}_2$  is  $-283.0\text{kJ/mol}$ .



Using the previous equations determine the enthalpy change for the combustion of C to  $\text{CO}(\text{g})$ :



4. (Brown165b) Calculate  $\Delta\text{H}$  for the reaction



given the following reactions and their respective enthalpy changes:

