

Skill Practice 53

First Law Practice

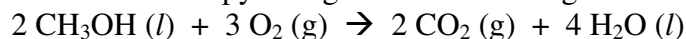
Name: _____

Date: _____

Hour: _____

For some of the following problems, you will need to use a table of ΔH_f values.

1. Using ΔH_f values calculate the enthalpy change for the following reaction.



-1453 kJ

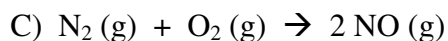
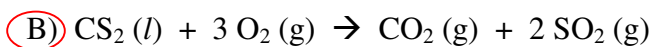
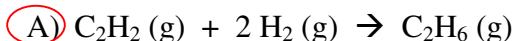
2. Using ΔH_f values calculate the enthalpy change for the decomposition of one mole of $\text{SO}_3 (g)$ into $\text{SO}_2 (g)$ and $\text{O}_2 (g)$.

99.2 kJ

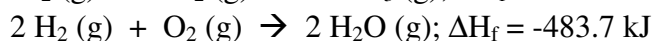
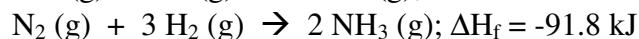
3. Calculate the enthalpy change in kilojoules when 54.7g of MgCO_3 decomposes according to the following equation: $\text{MgCO}_3 (s) \rightarrow \text{MgO} (s) + \text{CO}_2 (g)$

76.1 kJ

4. Which of the following reactions are exothermic?



5. Calculate the enthalpy for the following reaction: $4 \text{NH}_3 (g) + 5 \text{O}_2 (g) \rightarrow 4 \text{NO} (g) + 6 \text{H}_2\text{O} (g)$. You may only use the following information:



-918.3 kJ