1. How much heat will be released when 6.44 g of sulfur reacts with excess O$_2$ according to the following equation?
   \[ 2 \text{ S} + 3 \text{ O}_2 \rightarrow 2 \text{ SO}_3 \quad \Delta H = -791.4 \text{ kJ} \]

2. How much heat will be released when 4.72 g of carbon reacts with excess O$_2$ according to the following equation?
   \[ \text{C} + \text{ O}_2 \rightarrow \text{CO}_2 \quad \Delta H = -393.5 \text{ kJ} \]

3. How much heat will be absorbed when 38.2 g of bromine reacts with excess H$_2$ according to the following equation?
   \[ \text{H}_2 + \text{ Br}_2 \rightarrow 2 \text{ HBr} \quad \Delta H = 72.80 \text{ kJ} \]

4. How much heat will be released when 1.48 g of chlorine reacts with excess phosphorus according to the following equation?
   \[ 2 \text{ P} + 5 \text{ Cl}_2 \rightarrow 2 \text{ PCl}_5 \quad \Delta H = -886 \text{ kJ} \]

5. How much heat will be released when 4.77 g of ethanol (C$_2$H$_5$OH) reacts with excess O$_2$ according to the following equation?
   \[ \text{C}_2\text{H}_5\text{OH} + 3 \text{ O}_2 \rightarrow 2 \text{ CO}_2 + 3 \text{ H}_2\text{O} \quad \Delta H = -1366.7 \text{ kJ} \]
6. How much heat will be absorbed when 13.7 g of nitrogen reacts with excess oxygen according to the following equation?
\[ \text{N}_2 + \text{O}_2 \rightarrow 2 \text{NO} \]  
\[ \Delta H = 180 \text{ kJ} \]

7. How much heat will be released when 11.8 g of iron reacts with excess oxygen according to the following equation?
\[ 3 \text{Fe} + 2 \text{O}_2 \rightarrow \text{Fe}_3\text{O}_4 \]  
\[ \Delta H = -1120.48 \text{ kJ} \]

8. How much heat will be released when 18.6 g of hydrogen reacts with excess O₂ according to the following equation?
\[ 2 \text{H}_2 + \text{O}_2 \rightarrow 2 \text{H}_2\text{O} \]  
\[ \Delta H = -571.6 \text{ kJ} \]

9. How much heat will be transferred when 14.9 g of ammonia reacts with excess O₂ according to the following equation? Is this reaction endothermic or exothermic?
\[ 4 \text{NH}_3 + \text{O}_2 \rightarrow 4 \text{NO} + 6 \text{H}_2\text{O} \]  
\[ \Delta H = -1170 \text{ kJ} \]

10. How much heat will be transferred when 5.81 g of graphite reacts with excess hydrogen according to the following reaction? Is this reaction endothermic or exothermic?
\[ 6 \text{C} \text{(graphite)} + 3 \text{H}_2 \rightarrow \text{C}_6\text{H}_6 \]  
\[ \Delta H = 49.03 \text{ kJ} \]