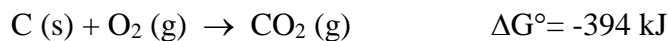
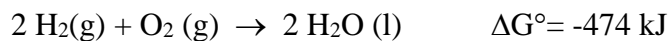
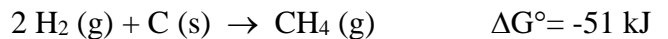
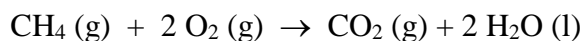


FREE ENERGY CHANGE & SPONTANEITY**Exit Ticket**

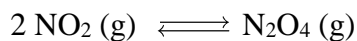
1. Given the following data:



Calculate ΔG° for the following reaction:



2. Consider the following reaction:

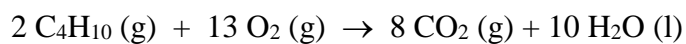


For each of the following mixture of reactants and products at 25°C, predict the direction in which the reaction will shift to reach equilibrium:

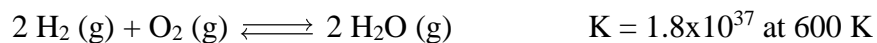
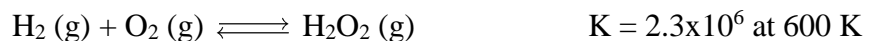
a) $P_{\text{NO}_2} = P_{\text{N}_2\text{O}_4} = 1.0 \text{ atm}$

b) $P_{\text{NO}_2} = 0.29 \text{ atm}$ $P_{\text{N}_2\text{O}_4} = 1.6 \text{ atm}$

3. The value of ΔG° for the reaction shown below is -5490 kJ. Use this value and other data from appendix II in your textbook to calculate ΔH°_f for C_4H_{10} (g).



4. Calculate ΔG° for $\text{H}_2\text{O} (\text{g}) + \frac{1}{2} \text{O}_2 (\text{g}) \rightleftharpoons \text{H}_2\text{O}_2 (\text{g})$ at 600 K from the following data:



5. Using the following data, calculate the value of K_{sp} for $\text{Ba}(\text{NO}_3)_2$, one of the least soluble of the common nitrate salts.

<i>Species</i>	ΔG°_f
$\text{Ba}^{2+} (\text{aq})$	-561 kJ/mol
NO_3^-	-109 kJ/mol
$\text{Ba}(\text{NO}_3)_2 (\text{s})$	-797 kJ/mol