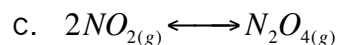
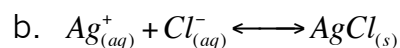
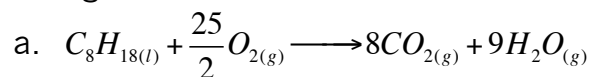
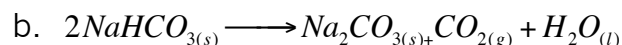
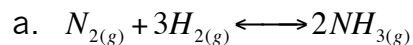


Thermo Review

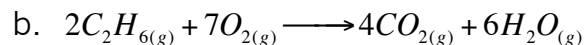
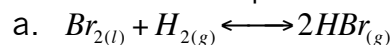
1. Predict whether ΔS° would be positive or negative for each of the following reactions.



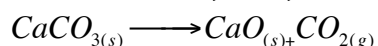
2. Calculate ΔS° for each reaction.



3. Calculate ΔG° for each reaction. Is the reaction thermodynamically favored at this temperature (298 K)?

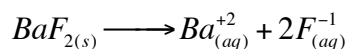


4. Is the following reaction thermodynamically favored at 25 °C? If not, find the temperature at which it will be favored? Hint: you will need to calculate ΔH° , ΔS° , and ΔG° .



5. If $\Delta H^\circ = -424 \text{ kJ/mol}$ and $\Delta S^\circ = -300 \text{ J/molK}$, find ΔG° at 298 K. Is the reaction thermodynamically favored? If not, find the temperatures at which it will be.

6. Barium fluoride has a K_{sp} of 1.7×10^{-6} . Find ΔG° for this reaction.



7. For each of the following reactions determine whether they are thermodynamically favored at 25°C, whether they are driven by entropy, enthalpy, both or neither?

Rxn	ΔH° (kJ/mol)	ΔS° (J/molK)	Thermodynamically favored at 298K?	Driven by enthalpy?	Driven by entropy?
A	-424	-300			
B	-150	+200			
C	+58	+390			
D	+2400	-450			