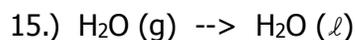
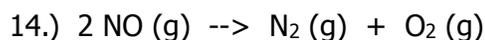
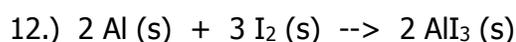
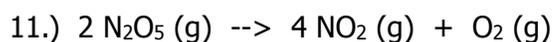
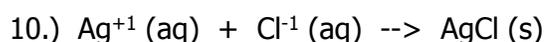
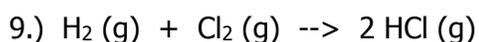
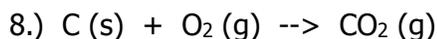
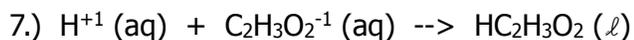
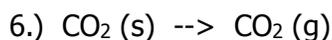
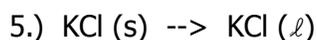
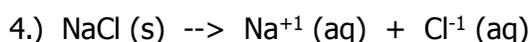
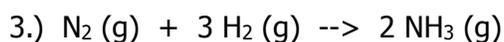
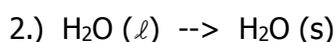
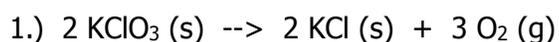


UNIT 14 - Reaction Energy & Reaction Kinetics

ENTROPY WORKSHEET

Entropy is the degree of randomness in a substance. The symbol for change in entropy is ΔS . Solids are very ordered and have low entropy. Liquids and aqueous ions have more entropy because they move about more freely, and gases have an even larger amount of entropy. According to the Second Law of Thermodynamics, nature is always proceeding to a state of higher entropy.

Determine whether the following reactions show an increase or decrease in entropy (positive ΔS or negative ΔS).



GIBBS FREE ENERGY WORKSHEET

The equation for Gibbs Free Energy is: $\Delta G = \Delta H - T\Delta S$

For a reaction to be spontaneous, the sign for ΔG has to be negative. ΔH represents the heat of reaction. ΔS is the change in entropy. T is temperature in Kelvins.

A negative value for ΔH means that the reaction is exothermic. That means that heat is released.
A positive value for ΔH means that the reaction is endothermic. That means that heat is absorbed.
A negative value for ΔS means that the products are more ordered than the reactants.
A positive value for ΔS means that the products are less ordered than the reactants.

Part 1 - Complete the following table for the sign of ΔG : +, -, or undetermined. When undetermined, the temperature determines the sign of ΔG .

ΔH	ΔS	ΔG
-	+	

