Worksheet 11: The thermodynamics of chemical and physical processes

Chemical Reaction		**ΔH (kJ)**	**BE (kJ)**	**Δn_{ga}**	**w (kJ)**	**Δn_{system}**	**TΔS (kJ)**	**ΔG (kJ)**
$CH_{4g} + 2O_{2g} \rightarrow CO_{2g} + 2H_2O_g$	sign							
Explain: Combustion reaction, would predict large heat and spontaneous reaction. Δn = 0 means no work, small entropy change.	calc.							
$2H_{2g} + O_{2g} \rightarrow 2H_2O_g$	sign							
Explain:	calc.							
$2H_2O_g \rightarrow 2H_{2g} + O_{2g}$	sign							
Explain:	calc.							
$C_2H_5OH_l + 3O_{2g} \rightarrow 2CO_{2g} + 3H_2O_g$	sign							
Explain:	calc.							
$C_2H_5OH_l + 3O_{2g} \rightarrow 2CO_{2g} + 3H_2O_l$	sign							
Explain:	calc.							
$C_3H_{8g} + 5O_{2g} \rightarrow 3CO_{2g} + 4H_2O_g$	sign							
Explain:	calc.							
$2H_2O_{2l} \rightarrow 2H_2O_l + O_{2\ g}$	sign							
Explain:	calc.							
$CCl_{4l} \rightarrow C_s + 2Cl_{2g}$	sign							
Explain:	calc.							
$Ba(OH)_2(H2O)_{8s} + 2NH_4NO_3 \rightarrow Ba(NO_3)_2s + 2NH_{3g} + 10H_2O_l$	sign							
Explain:	calc.							
$2O_{3g} \rightarrow 3O_{2g}$	sign							
Explain:	calc.							

Chemical Reaction		**ΔH (kJ)**	**BE (kJ)**	**Δn_{ga}**	**w (kJ)**	**Δn_{system}**	**TΔS (kJ)**	**ΔG (kJ)**
$CO_{2g} \rightarrow CO_{2s}$	sign							
Explain:	calc.							
$NH_{3g} + HCl_g \rightarrow NH_4Cl_s$	sign							
Explain:	calc.							
$H_2O_s \rightarrow H_2O_l$	sign							
Explain:	calc.							
Reaction:	sign							
Explain:	calc.							
	sign							
Explain:	calc.							
Reaction:	sign							
Explain:	calc.							
Reaction:	sign							
Explain:	calc.							
Reaction:	sign							
Explain:	calc.							
Reaction:	sign							
Explain:	calc.							
Reaction:	sign							
Explain:	calc.							