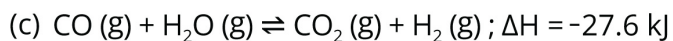
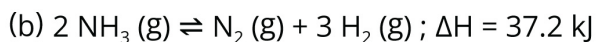
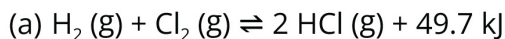


Le Chatelier's Principle

1. Predict the effect of decreasing the temperature on the position of the following equilibria.



2. For the reaction :



Predict the effect on the position of equilibrium that results from :

Stress	Shift	Stress	Shift
The pressure is increased		H_2 is removed	
The temperature is increased		A catalyst is added	
CO is added		An inert gas is added	

3. Given the reaction at equilibrium : $2 \text{A}(\text{g}) + 3 \text{B}(\text{g}) \rightleftharpoons \text{A}_2\text{B}_3(\text{g}) + \text{heat}$

Which change will not affect the equilibrium concentrations of A (g), B (g), and A_2B_3 (g) ?

(A) adding more A(g)

(B) adding a catalyst

(C) increasing the temperature

(D) increasing the pressure

Ans: _____

4. Consider the following equilibrium system in a closed vessel. N_2O_4 is a colorless gas, while NO_2 is a red/brown gas.



Predict what will happen to the color of the gas mixture in the vessel (lighten, darken) if :

(a) More N_2O_4 is added to the vessel

(b) The volume of the vessel is increased

(c) The system is cooled down

