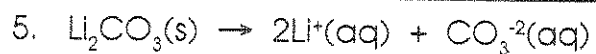
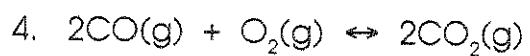
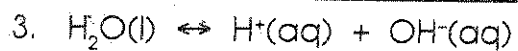
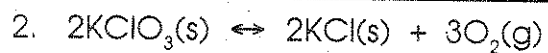
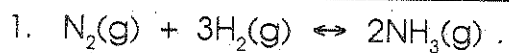


EQUILIBRIUM CONSTANT (K)

Name _____

Write the expression for the equilibrium constant K for the reactions below.



CALCULATIONS USING THE EQUILIBRIUM CONSTANT

Name _____

Using the equilibrium constant expressions you determined on page 79, calculate the value of K when:

1. $[\text{NH}_3] = 0.0100 \text{ M}$, $[\text{N}_2] = 0.0200 \text{ M}$, $[\text{H}_2] = 0.0200 \text{ M}$

2. $[\text{O}_2] = 0.0500 \text{ M}$

3. $[\text{H}^+] = 1 \times 10^{-8} \text{ M}$, $[\text{OH}^-] = 1 \times 10^{-6} \text{ M}$

4. $[\text{CO}] = 2.0 \text{ M}$, $[\text{O}_2] = 1.5 \text{ M}$, $[\text{CO}_2] = 3.0 \text{ M}$

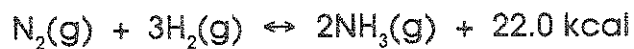
5. $[\text{Li}^+] = 0.2 \text{ M}$, $[\text{CO}_3^{2-}] = 0.1 \text{ M}$

LE CHATELIER'S PRINCIPLE

Name _____

Le Chatelier's Principle states that when a system at equilibrium is subjected to a stress, the system will shift its equilibrium point in order to relieve the stress.

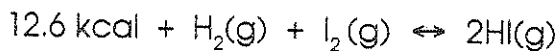
Complete the following chart by writing left, right or none for equilibrium shift, and decreases, increases or remains the same for the concentrations of reactants and products, and for the value of K.



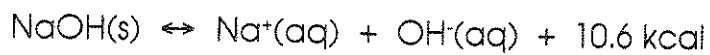
Stress	Equilibrium Shift	[N ₂]	[H ₂]	[NH ₃]	K
1. Add N ₂	right	_____	decreases	increases	remains the same
2. Add H ₂			_____		
3. Add NH ₃				_____	
4. Remove N ₂		_____			
5. Remove H ₂			_____		
6. Remove NH ₃				_____	
7. Increase Temperature					
8. Decrease Temperature					
9. Increase Pressure					
10. Decrease Pressure					

LE CHATELIER'S PRINCIPLE CONTINUED

Name _____



Stress	Equilibrium Shift	[H ₂]	[I ₂]	[HI]	K
1. Add H ₂	right	_____	decreases	increases	remains the same
2. Add I ₂			_____		
3. Add HI				_____	
4. Remove H ₂		_____			
5. Remove I ₂			_____		
6. Remove HI				_____	
7. Increase Temperature					
8. Decrease Temperature					
9. Increase Pressure					
10. Decrease Pressure					



(Remember that pure solids and liquids do not affect equilibrium values.)

Stress	Equilibrium Shift	Amount NaOH(s)	[Na ⁺]	[OH ⁻]	K
1. Add NaOH(s)		_____			
2. Add NaCl (Adds Na ⁺)			_____		
3. Add KOH (Adds OH ⁻)				_____	
4. Add H ⁺ (Removes OH ⁻)				_____	
5. Increase Temperature					
6. Decrease Temperature					
7. Increase Pressure					
8. Decrease Pressure					