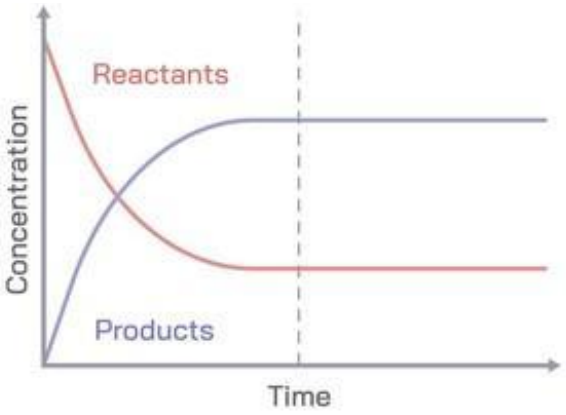
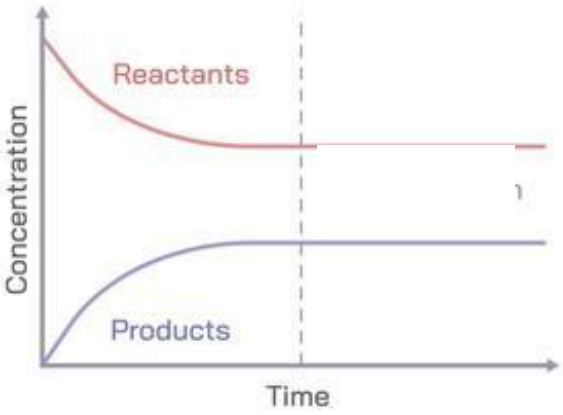
Equilibrium Worksheet Name: _____

1. Use the graphs below to answer the following.



K_{eq} = _____
Prefers: Forward or Reverse?



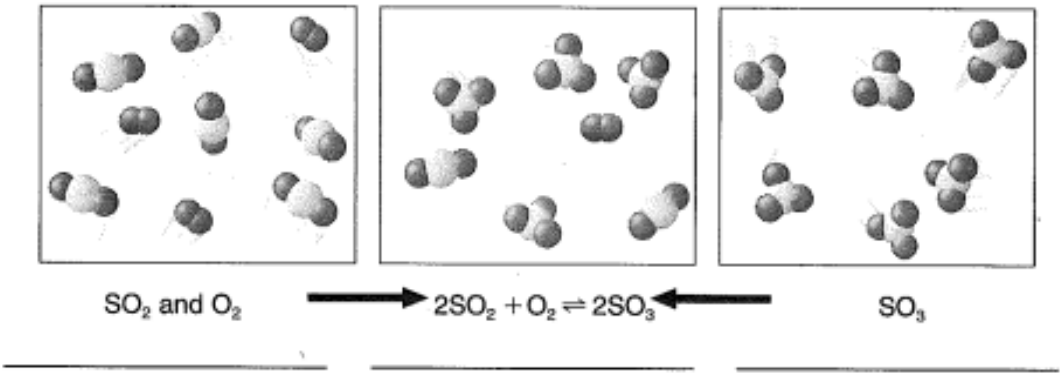
K_{eq} = _____
Prefers: Forward or Reverse?

A) Write a reasonable K_{eq} value for each of the reactions above (make one up!)

B) Does each of the reactions tend to prefer the forward direction or the reverse direction?

C) Label the equilibrium point on both graphs above.

2. Use the diagram below to answer the following.



A) Label each of the three blanks above as "at equilibrium" or "not equilibrium."

B) Write an equilibrium expression for the reaction above.

C) Look at the box that you labeled "at equilibrium," and count the number of each species (SO_2, O_2, and SO_3). Plug these numbers into the equilibrium expression you wrote in part B to *calculate* the value of K_{eq} for this reaction.

D) What are *two stresses* a chemist could place upon this chemical system to push it in the forward direction?

3. Use Le Chatelier's principle to complete the table in regards to the following reaction:

$N_{2(g)} + 3H_{2(g)} \Leftrightarrow 2NH_{3(g)} + 91.8\ kJ$

Stress	Shift	$[N_2]$	$[H_2]$	$[NH_3]$	K
Add N_2	Right	----------	Decreases	Increases	Stays same
Add H_2			----------		
Add NH_3				----------	
Remove N_2		----------			
Remove H_2			----------		
Remove NH_3				----------	
Increase Temp					
Decrease Temp					
Increase Pressure					
Decrease Pressure					

4. Use Le Chatelier's principle to complete the table in regards to the following reaction:

$52.7kJ + H_{2(g)} + I_{2(g)} \Leftrightarrow 2HI_{(g)}$

Stress	Shift	$[H_2]$	$[I_2]$	[HI]	K
Add H_2	Right	----------	Decreases	Increases	Stays same
Add I_2			----------		
Add Hi				----------	
Remove H_2		----------			
Remove I_2			----------		
Remove HI				----------	
Increase Temp					
Decrease Temp					
Increase Pressure					
Decrease Pressure					