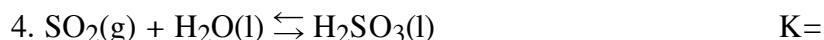
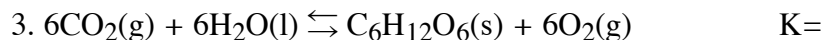
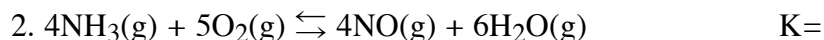
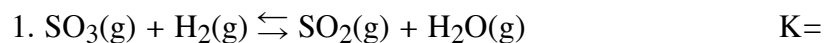
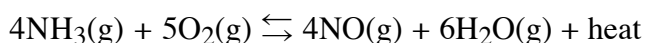


Name _____

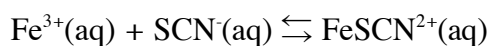
Period _____

**Honors Chemistry
Equilibrium Practice Test**

Form P**Part I:** Equilibrium Constants Write equilibrium constant expressions for the following reactions:**Part II:** What direction will the equilibrium shift towards when the following stresses are added to this system at equilibrium.

NH ₃ is removed	
It is placed in boiling water	
NO is added	
It is placed in an ice bath	
O ₂ is removed	

In this unit you did a lab that dealt with the following equilibrium:

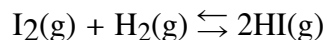


Fill in the following table based upon what you observed during the lab.

Solution Added	What two ions are in this solution?	Will it get darker or lighter?	How will the [FeSCN ²⁺] Change?
Potassium carbonate			
Calcium thiocyanate			
Sodium bromide			
Potassium hydroxide			
Potassium nitrate			
Iron (III) bromide			
Ammonium bromide			

Part III: Math Problems. Solve the following equilibrium problems using math. Show all work!

1) This equation:



describes a reaction that was carried out at 460 Celsius with the following results:

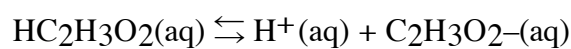
Concentrations in moles per liter:

Trial	H ₂	I ₂	HI
1	0.00647	0.000594	0.0137
2	0.00384	0.00152	0.0169
3	0.00143	0.00143	0.0100

A. Write the equilibrium expression for this reaction

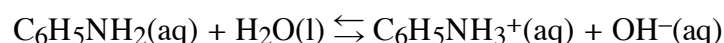
B. Verify that the constant for this expression is constant by calculating the value for all three trials.

2) For the acid reaction:



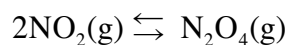
the K is equal to 1.75×10^{-5} . What is the concentration of H⁺ at equilibrium if you start with 0.30 Molar HC₂H₃O₂?

3) For the reaction:



K = 3.8×10^{-10} . Calculate the concentration of all species at equilibrium if you initially have 0.200 M C₆H₅NH₂(aq).

4) K for the reaction of:



is 6.67. What is the concentration of both species at equilibrium if you start with 0.300 M nitrogen dioxide?