

**CHEM 36**  
**General Chemistry**  
**Quiz #4**

March 1, 2002

**Name:** \_\_\_\_\_

At 398.25 K, the following reaction has an equilibrium constant (K) equal to 2.4:



1. If initially we have 1.0 atm of each compound in a reaction vessel: is the system at equilibrium and, if not, state whether the reaction proceeds to the right or to the left as equilibrium is approached. (Remember to show all work!)

2. If, after reaching equilibrium, the volume of the system is *increased*, will the reaction shift to the right or to the left as a result of this volume change? (Remember to show your work or reasoning behind your answer!)

3. If this reaction is *endothermic*, would the system shift to the right or to the left if the system at equilibrium was cooled? (Remember to show your work or reasoning behind your answer!)

4. If  $\text{SO}_2 (\text{g})$  is added to the system at equilibrium, would the system shift to the right or to the left as it re-equilibrates? (Remember to show your work or reasoning behind your answer!)