

### Equilibrium Worksheet #2

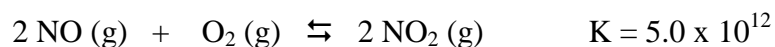
1. Scientific Notation:

Convert each of the following into scientific notation:

131000 \_\_\_\_\_

0.0000024 \_\_\_\_\_

2. Which side of the equation (reactants or products) is favored at equilibrium?



Explain your reasoning:

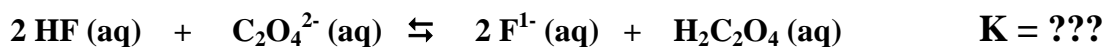
Rxn #1	$A + 2B \rightleftharpoons C + 3D$	$K = 4.1 \times 10^7$
Rxn #2	$E \rightleftharpoons 2F + 5G$	$K = 5.3 \times 10^{-8}$
Rxn #3	$2J \rightleftharpoons K + 6B$	$K = 2.8 \times 10^3$

3. What are the equilibrium constants for each of the following chemical reactions?



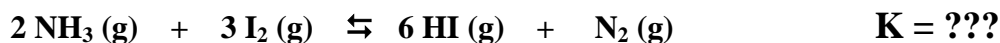
Reaction #1	$\text{HF (aq)} \rightleftharpoons \text{H}^+ \text{(aq)} + \text{F}^{1-} \text{(aq)}$	$K_1 = 6.8 \times 10^{-4}$
Reaction #2	$\text{N}_2 \text{(g)} + 3 \text{H}_2 \text{(g)} \rightleftharpoons 2 \text{NH}_3 \text{(g)}$	$K_2 = 1.04 \times 10^{-4}$
Reaction #3	$\text{H}^+ \text{(aq)} + \text{HS}^{1-} \text{(aq)} \rightleftharpoons \text{H}_2\text{S (aq)}$	$K_3 = 1.1 \times 10^7$
Reaction #4	$\text{H}_2\text{C}_2\text{O}_4 \text{(aq)} \rightleftharpoons 2 \text{H}^+ \text{(aq)} + \text{C}_2\text{O}_4^{2-} \text{(aq)}$	$K_4 = 3.8 \times 10^{-6}$
Reaction #5	$\text{H}^+ \text{(aq)} + \text{S}^{2-} \text{(aq)} \rightleftharpoons \text{HS}^{1-} \text{(aq)}$	$K_5 = 1.0 \times 10^{19}$
Reaction #6	$\text{H}_2 \text{(g)} + \text{I}_2 \text{(g)} \rightleftharpoons 2 \text{HI (g)}$	$K_6 = 5.40 \times 10^1$

4. Based on the information above, what is the equilibrium constant for the following?



*SHOW YOUR WORK....*

5. Based on the information above, what is the equilibrium constant for the following?



*SHOW YOUR WORK....*

6. Based on the information above, what is the equilibrium constant for the following?



*SHOW YOUR WORK....*