

Name \_\_\_\_\_ Section \_\_\_\_\_ TA \_\_\_\_\_

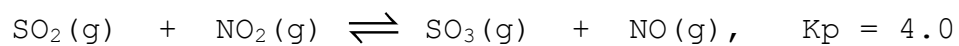
1. For the reaction  $\text{H}_2(\text{g}) + \text{I}_2(\text{g}) \rightleftharpoons 2\text{HI}(\text{g})$ ,  $K_p = 22.5$ .(a) If  $P_{\text{H}_2} = 0.100$  atm and  $P_{\text{HI}} = 0.250$  atm, what is  $P_{\text{I}_2}$ ?

$$P_{\text{I}_2} = \underline{\hspace{2cm}}$$

(b) If  $P_{\text{H}_2} = 0.100$  atm  $P_{\text{I}_2}$  and  $P_{\text{HI}} = 0.150$  atm, what is  $P_{\text{HI}}$ ?

$$P_{\text{HI}} = \underline{\hspace{2cm}}$$

2. If initially all partial pressures are 0.200 atm, what partial pressures are expected at equilibrium?



$$P_{\text{SO}_2} = P_{\text{NO}_2} = \underline{\hspace{2cm}}$$

$$P_{\text{SO}_3} = P_{\text{NO}} = \underline{\hspace{2cm}}$$

3. For reaction as indicated:



(a) Find K when the equation is written as:  $2 \text{NO}_2(\text{g}) \rightleftharpoons \text{N}_2\text{O}_4(\text{g})$

$$K_p = \underline{\hspace{2cm}}$$

(b) Find K for the equation as:  $2 \text{N}_2\text{O}_4(\text{g}) \rightleftharpoons 4 \text{NO}_2(\text{g})$

4. For each reaction, how will the change shift the equilibrium and what will be the effects on the [...] and n values?

Equation for reaction	Change Applied	Shift (R, L, or N)	Effects (I, D, or S)
$\text{NH}_4\text{Cl}(\text{s}) \rightleftharpoons \text{NH}_3(\text{g}) + \text{HCl}(\text{g})$	add $\text{NH}_3$	___	$[\text{NH}_3] =$ $[\text{HCl}] =$ $n_{\text{NH}_4\text{Cl}(\text{s})} =$
$\text{NH}_4\text{Cl}(\text{s}) \rightleftharpoons \text{NH}_3(\text{g}) + \text{HCl}(\text{g})$	add $\text{HCl}$	___	$[\text{NH}_3] =$ $[\text{HCl}] =$ $n_{\text{NH}_4\text{Cl}(\text{s})} =$
$\text{NH}_4\text{Cl}(\text{s}) \rightleftharpoons \text{NH}_3(\text{g}) + \text{HCl}(\text{g})$	add $\text{NH}_4\text{Cl}$	___	$[\text{NH}_3] =$ $[\text{HCl}] =$ $n_{\text{NH}_4\text{Cl}(\text{s})} =$

**Recommended Text Chapter 17 Problems:** 1-4, 14, 28, 29, 33, 34, 37-39, 43, 44, 46, 49, 53-60, 73...

Recommended text problems are not to be turned in. They are  suggested as study guides. The answers to many of these are in  the back of the text. Solutions will be posted

**Turn in** completed homework sets **to your TA before class** on the  date indicated. Solutions will be posted