HONORS CHEMISTRY
HOMEWORK 11a. Name: _____

A. WRITE AN EQUILIBRIUM EXPRESSION for each of the following reactions:

1. $2\ CO\ (g) + O_2\ (g) \rightleftharpoons 2\ CO_2\ (g)$ $K_{eq} =$

2. $2\ NO_2\ (g) \rightleftharpoons 2\ NO\ (g) + O_2\ (g)$ $K_{eq} =$

3. $CO\ (g) + Cl_2\ (g) \rightleftharpoons COCl_2\ (g)$ $K_{eq} =$

B. IDENTIFY THE BASE, THE ACID, AND THE CONJUGATE BASE in each of the following:

4. $2\ Na^+\ (aq) + CO_3^{2-}\ (aq) + HNO_3\ (aq) \rightleftharpoons 2\ Na^+\ (aq) + NO_3^-\ (aq) + HCO_3^-\ (aq)$
   Base: Acid: Conjugate base:

5. $NH_3\ (g) + H_2O\ (l) \rightleftharpoons NH_4^+\ (aq) + OH^-\ (aq)$
   Base: Acid: Conjugate base:

C. LE CHATELIER'S PRINCIPLE

6. For the reaction. $2\ NO_2\ (g) \rightleftharpoons 2\ NO\ (g) + O_2\ (g)$
   tell which way the equilibrium would shift if:
   a. some NO_2 was taken away
   b. some oxygen was taken away
   c. more NO was added
   d. the pressure was increased