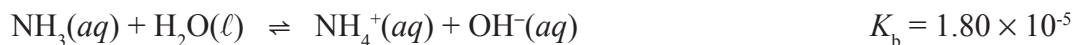


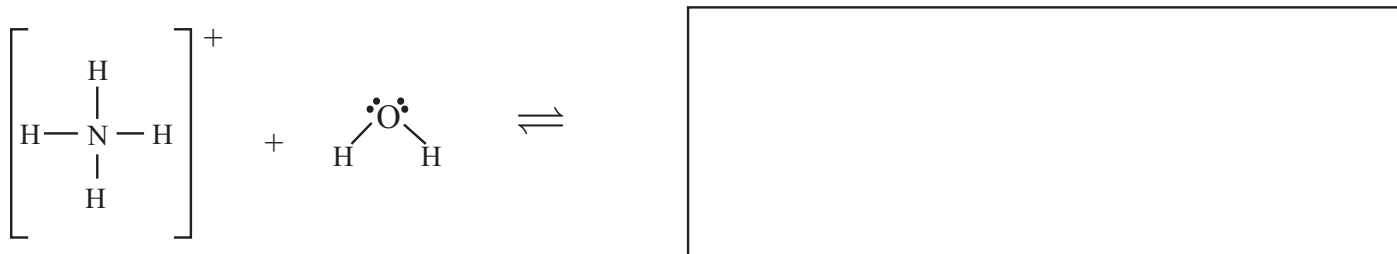
NMSI Super Problem: Acid Base Equilibrium



Ammonia reacts with water as indicated in the reaction above.

- Write the equilibrium constant expression for the reaction represented above.
- Calculate the pH of a 0.150 *M* solution of NH_3 .
- Determine the percent ionization of the weak base NH_3 .
- Calculate the hydronium ion, H_3O^+ , concentration in the above solution. Be sure to include units with your answer.

When a specified amount of ammonium nitrate (NH_4NO_3) is dissolved in water, the ammonium ions hydrolyze the water according to the partial reaction shown below. The resulting solution has a pH of 4.827.



- Complete the reaction above by drawing the *complete* Lewis structures for *both* products of the hydrolysis reaction.

- f. Determine the
- molarity (M) of the ammonium ions in this solution
 - number of moles ammonium ions in 250 mL of the above solution.