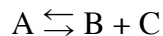


Equilibrium Table Practice

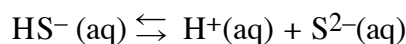
Solve the following problems using the equilibrium table method.

1. For the reaction:



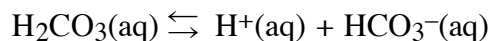
the equilibrium constant is 3.0×10^{-6} . What is the concentration of B at equilibrium if A was originally 0.10 M?

2. The K for the reaction:



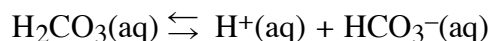
is 3×10^{-13} . What is the concentration of S^{2-} at equilibrium if we start with 1.00 M HS^- ?

3. The dissociation of carbonic acid is:



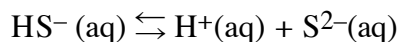
if the equilibrium constant for this reaction is 4.5×10^{-7} what is the concentration of H^+ after 0.25 M H_2CO_3 dissociates?

4. The dissociation of carbonic acid is:



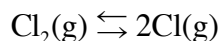
if the equilibrium constant for this reaction is 4.5×10^{-7} what is the concentration of H^+ after 0.10 M H_2CO_3 dissociates? This is not the same as question number 3!

5. The K for the reaction:

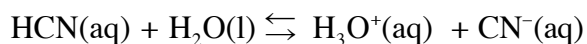


is 3×10^{-13} . What is the concentration of S^{2-} at equilibrium if we start with 0.100 M HS^- ? How is this different from number 2?

6. Now try a quadratic. Chlorine gas dissociates into two chlorine atoms. The K is 0.37. Find the concentration of chlorine minus ions if the chlorine gas was 0.10 M to begin with.

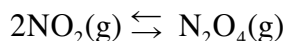


7. Now try something sort of different. The K for the reaction of HCN is 4.8×10^{-10} for the following reaction:



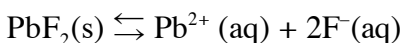
What is the concentration of cyanide ion at equilibrium if you start with 0.100 M HCN? What do you do about water, which is a liquid?

8. K for the reaction of:



is 6.67. What is the concentration of both species at equilibrium if you start with 0.500 M nitrogen dioxide? Remember the 2.

9. The K for the following reaction is very small it is 3.7×10^{-8} .



What is the concentration of lead ion at equilibrium? No I actually didn't forget to give anything that is all the information you need.

10. The reaction for the decomposition of CO_2 is:



If you initially have 0.20 M CO_2 what is the concentration of oxygen at equilibrium? Ugly math. $K = 2.96 \times 10^{-92}$