

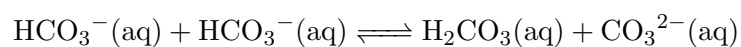
Chapter 7 Challenge Problem Solutions

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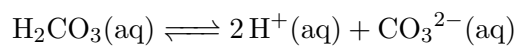
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- a. The principal equilibrium in a solution of NaHCO_3 is



Calculate the value of the equilibrium constant for this reaction.

- b. At equilibrium, what is the relationship between $[\text{H}_2\text{CO}_3]$ and $[\text{CO}_3^{2-}]$?
c. Using the equilibrium



and the result from part b, derive an expression for the pH of the solution in terms of K_{a_1} and K_{a_2}