

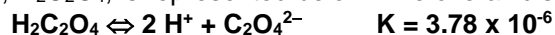
Name: _____

Period: _____

Seat#: _____

Directions: Show all work for each problem and/or give an AP level explanation. Box your final answers.

The overall dissociation of oxalic acid, $\text{H}_2\text{C}_2\text{O}_4$, is represented below. The overall dissociation constant is also indicated.



1) What volume of 0.400-molar NaOH is required to neutralize completely a 5.00×10^{-3} mole sample of pure oxalic acid? 25.0 mL

2) Give the equations representing the first and second dissociations of oxalic acid.

3) Calculate the value of the first dissociation constant, K_1 , for oxalic acid if the value of the second dissociation constant, K_2 , is 6.40×10^{-5} . 5.91×10^{-2}

4) To a 0.015-molar solution of oxalic acid, a strong acid is added until the pH is 0.5. Calculate the $[\text{C}_2\text{O}_4^{2-}]$ in the resulting solution. (Assume the change in volume is negligible.) $5.67 \times 10^{-7} \text{ M}$

5) Calculate the value of the equilibrium constant, K_b , for the reaction that occurs when solid $\text{Na}_2\text{C}_2\text{O}_4$ is dissolved in water. 1.56×10^{-10}