**Name: Period: Seat#:**

**Worksheet #3**

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

The overall dissociation of oxalic acid, H2C2O4, is represented below. The overall dissociation constant is also indicated.

**H2C2O4 ⇔ 2 H+ + C2O42− K = 3.78 x 10-6**

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| 1. What volume of 0.400-molar NaOH is required to neutralize completely a 5.00 x 10-3 mole sample of pure oxalic acid? *25.0 mL* |
| 1. Give the equations representing the first and second dissociations of oxalic acid. |
| 1. Calculate the value of the first dissociation constant, K1, for oxalic acid if the value of the second dissociation constant, K2, is 6.40 x 10−5. *5.91×10–2* |
| 1. To a 0.015-molar solution of oxalic acid, a strong acid is added until the pH is 0.5. Calculate the [C2O42−] in the resulting solution. (Assume the change in volume is negligible.) *5.67×10–7 M* |
| 1. Calculate the value of the equilibrium constant, Kb, for the reaction that occurs when solid Na2C2O4 is dissolved in water. *1.56×10–10* |