**Name: Period: Seat#:**

**Worksheet #1**

**Directions:** Show all work. Box final answers.

|  |  |
| --- | --- |
| 1. **Strong Acid Solution** – *assume full dissociation* Calculate the pH of 0.00125 M HNO3 *2.903*  *>> Determine [H+] and then the pH.* | 1. Strong Base Solution – *assume full dissociation* Calculate the pH of 0.00125 M KOH *11.097*  *>> Determine [OH-], calculate pOH, and then calculate the pH.* |
| 1. **Weak Acid Solution** – *does not fully dissociate* Calculate the pH of 0.00125 M HOCl *5.18* Ka= 3.5 x 10-8   *>> Determine [H+] using an ICE table, then calculate the pH.* | 1. **Weak Base Solution** – *does not fully dissociate* Calculate the pH of 0.00125 M NH3 *10.15* Kb= 1.8 x 10-5   *>> Determine [OH-] using an ICE table, calculate the pOH, then   calculate the pH.* |
| 1. **Salt of a Weak Acid** – *have to consider hydrolysis* Calculate the pH of 0.00125 M NaOCl *9.28* Ka HOCl = 3.5 x 10-8   *>> Write hydrolysis, calculate Kb, determine [OH-] using an ICE   table, calculate the pOH, then calculate the pH.* | 1. **Salt of a Weak Base** – *have to consider hydrolysis* Calculate the pH of 0.00125 M NH4Cl *6.08* Kb NH3 = 1.8 x 10-5   *>> Write hydrolysis, calculate Ka, determine [H+] using an ICE   table, then calculate the pH.* |
| 1. **Diprotic Acid Solution** – *1st is strong, 2nd is weak* Calculate the pH of 0.00125 M H2CO3 *4.64* Ka1 = 4.2 x 10-7 Ka2 = 4.8 x 10-11   *>> Assume the only impactful amount of [H+] dissociated came   from the 1st ionization, determine [H+] using an ICE table, then   calculate pH.* | 1. **Mixture of Acid and Base** – *neutralize then see excess* Calculate the pH of 20.0 mL of 0.00125 M HNO3 added to 30.0 mL of 0.00125 M KOH *10.398*  *>> Determine the moles of excess H+ or OH- taking into account   the balanced chemical equation, determine the total volume   of the mixture, calculate the [H+] or [OH-] based on the   excess that was left after neutralization, then calculate the   final pH.* |