**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.*
 |