Dougherty Valley HS AP Chemistry
Acid Base – pH Calculations

WORKSHEET #1

Name: **Date:** **Period:** **Seat #:**

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strong acid solution – determine [H+], calculate pH (2.903) Calculate the pH of 0.00125M HNO_3	**strong base solution** – determine [OH-], calculate pOH, calculate pH (11.097). Calculate the pH of 0.00125M KOH
weak acid solution – determine [H+] using ICE box, calculate pH (5.18). Calculate the pH of 0.00125M HOCl $K_a = 3.5 \times 10^{-8}$	**weak base solution** – determine [OH-] using ICE box, calculate pOH, calculate pH (10.15). Calculate the pH of 0.00125M NH_3 $K_b = 1.8 \times 10^{-5}$
salt of a weak acid – write hydrolysis, calc K_b, determine [OH-] using ICE box, calc pOH, calc pH (9.28). Calculate the pH of 0.00125M NaOCl	**salt of a weak base** – write hydrolysis, calc K_a, determine [H+] using ICE box, calc pH (6.08). Calculate the pH of 0.00125M NH_4Cl

diprotic acid solution – assume all [H+] from first ionization, determine [H+] using ICE box, calculate pH. Calculate the pH of 0.00125M H_2CO_3 $K_{a1} = 4.2 \times 10^{-7}$ $K_{a2} = 4.8 \times 10^{-11}$ (4.64)	**mixture of acid and base** – calculate moles of H+ and OH-, determine moles of excess H+ or OH-, determine total volume, calculate [H+] or [OH-], calculate pH Calculate the pH of 20.0 mL of 0.00125M HNO_3 + 30.0 mL of 0.00125M KOH (10.398)