

4Written Assign 4 Weak Acid/Weak Base Calculations

1. What is the $[\text{H}_3\text{O}^+]$ in a 0.050M solution of H_2S ?

2. What is the pH of a 0.20M solution of H_2O_2 ?

3. What concentration of HCOOH is required to produce a pH of 1.93?

4. The pH of a 0.250M solution of HX is 1.357. What is K_a for HX ?

5. What concentration of H_2CO_3 is required to produce a pH of 4.18?

6. Calculate $[\text{H}^+]$, $[\text{OH}^-]$, pH and pOH for a 0.20M solution of NH_3 .

7. $K_b = 1.7 \times 10^{-6}$ for hydrazine, N_2H_4 . If a solution of N_2H_4 has a pH of 10.50, what is the $[\text{N}_2\text{H}_4]$ in the solution?

Answer Key:

1) $6.7 \times 10^{-5} \text{ M}$

2) 6.16

3) 0.78M

4) 9.36×10^{-3}

5) 0.010 M

6) $[\text{OH}^-] = 1.9 \times 10^{-3} \text{ M}$ $[\text{H}_3\text{O}^{+}] = 5.3 \times 10^{-12} \text{ M}$ pOH = 2.72 pH = 11.28

7) .059M