

Worksheet 9

1. Calculate the molar concentration of OH^- ions in 0.5 M solution of hypobromite ion BrO^- , $K_b = 4.0 \times 10^{-6}$. What is the pH of the solution?
2. Predict whether aqueous solutions of the following substances are acidic, basic, or neutral: a) CrBr_3 , b) LiI , c) K_3PO_4 , d) KHSO_4
3. Explain the following observations: a) HCl is a stronger acid than H_2S , b) HBrO_3 is a stronger acid than HBrO_2 , c) H_3PO_4 is a stronger acid than H_3AsO_4
4. Identify the Lewis acid and Lewis base in each of the following reactions:
 - a) $\text{HNO}_2(\text{aq}) + \text{OH}^-(\text{aq}) \rightleftharpoons \text{NO}_2^-(\text{aq}) + \text{H}_2\text{O}(\text{l})$
 - b) $\text{FeBr}_3(\text{aq}) + \text{Br}^-(\text{aq}) \rightleftharpoons \text{FeBr}_4^-(\text{aq})$
 - c) $\text{Zn}^{2+}(\text{aq}) + 4 \text{NH}_3(\text{aq}) \rightleftharpoons \text{Zn}(\text{NH}_3)_4^{2+}(\text{aq})$