Chemistry Acid-Base Concentration Name:

1. Identify each of the following solutions as acidic or basic:

a) [H₃O⁺] M \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

b) [OH⁻] = M \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

c) [OH⁻] = M \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

d) [H₃O⁺] = M \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

2. A solution of HBr has [H₃O⁺] = M. Calculate the pH of this solution.

3. Complete the following table:

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
|  | **pH** | **[H₃O⁺]** | **[OH⁻]** | **Acidic, basic, or neutral?** |
| (a) |  |  |  |  |
| (b) |  |  |  |  |
| (c) | 10.75 |  |  |  |

4. Rank the following solutions in order of increasing acidity (from lowest to highest):

Solution A with pH = 6.50 Solution C with [OH⁻] = M

Solution B with [H3O⁺] = M Solution D with pH = 5.85

\_\_\_\_\_\_\_\_ < \_\_\_\_\_\_\_\_\_< \_\_\_\_\_\_\_\_\_< \_\_\_\_\_\_\_\_\_\_

least acidic most acidic

5. What is the pOH of a solution prepared by dissolving 2.5 g HCl in water to make 425 mL of solution?