

Acid-Base Water, pH and pOH Worksheet

Answer on separate sheet(s) of paper. Show work. Circle your answers.

1. What is the pH of 0.010 M HCl?
2. Determine the $[\text{OH}^-]$, $[\text{H}^+]$, pOH and pH of a 0.01 M KOH solution.
3. Calculate the $[\text{H}^+]$ for a 1.0×10^{-7} M OH^- solution. State whether the solution is acidic, neutral or basic.
4. What is the $[\text{H}^+]$ of a solution having a pH of 3.4?
5. If nitric acid is 100% ionized in a 0.0050 M solution, what is the pH of this solution?
6. A soft drink was put on the market $[\text{H}^+] = 1.4 \times 10^{-5}$ mol/L. What is its pH?
7. A blood specimen containing 7.2×10^{-8} H^+ mole/L. Is the blood specimen slightly acidic or slightly basic?
8. "Calcareous soil is soil rich in calcium carbonate (lime). The pH of such soil generally ranges from just over 7 to as high as 8.3. What value of $[\text{H}^+]$ corresponds to a pH of 8.3? Is the soil slightly acidic or slightly basic?
9. Find the values of $[\text{H}^+]$ and $[\text{OH}^-]$ that correspond to each of the following values of pH.
(a) 2.90 (the approximate pH of lemon juice)
(b) 3.85 (the approximate pH of sauerkraut)
(c) 4.11 (the pH of orange juice, on the average)
10. What is the pOH of a 0.010 M NaOH solution? What is the pH of this solution?
11. A sodium hydroxide solution is prepared by dissolving 6.0 g NaOH in 1.00 L of solution. What is the pOH and the pH of this solution?
12. A solution was made by dissolving 0.837 g $\text{Ba}(\text{OH})_2$ in 100 mL final volume. If $\text{Ba}(\text{OH})_2$ is fully broken up into its ions, what is the pOH and the pH of this solution?

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