

pH Practice Worksheet

Name _____

1. Calculate the pH of a solution whose hydronium $[H_3O^+]$ concentration is $5.0 \times 10^{-3} M$.
2. What is the pH of a 0.2M solution of a strong acid?
3. What is the pH of a solution if its hydroxide $[OH^-]$ concentration is equal to $2.0 \times 10^{-3} M$?
4. What is the pH of a solution that contains 0.35M of hydroxide ions?
5. What is the hydronium ion $[H_3O^+]$ concentration in a fruit juice solution that has a pH of 3.3?
6. A commercial window-cleaning liquid has a pH of 11.7. What is the hydroxide ion $[OH^-]$ concentration?
7. If the pH of a solution is 8.1, what is the pOH of the solution?
8. Normal human blood has a hydroxide ion concentration that ranges from $1.7 \times 10^{-7} M$ to $3.5 \times 10^{-7} M$, but diabetics often have readings outside this range. A patient's blood has a pH of 7.67. Is there cause for concern?
9. The hydronium ion concentration in a solution is $3.16 \times 10^{-3} M$. What is the hydroxide ion concentration?
10. The hydronium ion concentration in a solution is $5.82 \times 10^{-4} M$. What is the pH of this solution?
11. The pH of vinegar is 2.9. What are the **hydronium and hydroxide** concentrations in vinegar?
12. Stomach acid contains hydrochloric acid, whose concentration is about 0.03M. What is the pH of stomach acid?

13. If the hydroxide ion concentration of a solution is 0.0134M, what is the pH of the solution?
14. The pOH of a solution is 5.38. What is the hydroxide ion concentration of this solution?
15. Lithium hydroxide (LiOH) is a strong base. What is the pH of a 0.082M LiOH solution?
16. The pH of a solution is 9.5. What is the hydroxide ion concentration of this solution?
17. A solution has a pOH of 4.7. What is the hydrogen ion concentration of this solution?
18. What is the hydroxide ion concentration in a solution containing a pH of 8.72?
19. If 5.3g of the strong base NaOH is dissolved in water to form 1.500L of solution, what is the pH of this solution?
20. What is the pH of a solution consisting of 0.29mol of HBr dissolved into 1.0L of water?