

Worksheet # C60 Calculating pH and pOH Using Logs and Antilogs

1. What is K_w ? $K_w = [\text{ }] \times [\text{ }] = \text{_____}$

2. $\text{pH} + \text{pOH} = \text{_____}$

_____ Is this true for neutral solutions?

_____ Is this true for acidic solutions?

_____ Is this true for basic solutions?

3. What is the pH of a solution with a $[\text{H}_3\text{O}^+]$ of $5.67 \times 10^{-6} \text{M}$?

4. What is the pH of a solution with a $[\text{H}_3\text{O}^+]$ of $2.39 \times 10^{-11} \text{M}$?

5. What is the $[\text{H}_3\text{O}^+]$ of a solution with a pH of 10.9?

6. What is the $[\text{H}_3\text{O}^+]$ of a solution with a pH of 1.32?

7. What is the pOH of a solution with a $[\text{OH}^-]$ of $6.23 \times 10^{-3} \text{M}$?

8. What is the pOH of a solution with a $[\text{OH}^-]$ of $1.89 \times 10^{-12} \text{ M}$?

9. What is the $[\text{OH}^-]$ of a solution with a pOH of 3.72?

10. What is the $[\text{OH}^-]$ of a solution with a pOH of 11.5?

11. What is the pOH of the solution in

a. number 3 above? _____

b. number 4 above? _____

c. number 5 above? _____

d. number 6 above? _____

12. What is the pH of the solution in

a. number 7 above? _____

b. number 8 above? _____

c. number 9 above? _____

d. number 10 above? _____

13. What is the pH of a solution which has a $[\text{OH}^-]$ of 3.08×10^{-3} ?

14. What is the $[\text{H}_3\text{O}^+]$ of a solution which has a pOH of 4.88 ?