

9-4 Skills Practice**Common Logarithms**

Use a calculator to evaluate each expression to four decimal places.

1. $\log 6$

2. $\log 15$

3. $\log 1.1$

4. $\log 0.3$

Use the formula $\text{pH} = -\log[H^+]$ to find the pH of each substance given its concentration of hydrogen ions.

5. gastric juices: $[H^+] = 1.0 \times 10^{-1}$ mole per liter

6. tomato juice: $[H^+] = 7.94 \times 10^{-5}$ mole per liter

7. blood: $[H^+] = 3.98 \times 10^{-8}$ mole per liter

8. toothpaste: $[H^+] = 1.26 \times 10^{-10}$ mole per liter

Solve each equation or inequality. Round to four decimal places.

9. $3^x > 243$

10. $16^v \leq \frac{1}{4}$

11. $8^p = 50$

12. $7^y = 15$

13. $5^{3b} = 106$

14. $4^{5k} = 37$

15. $12^{7p} = 120$

16. $9^{2m} = 27$

17. $3^{r-5} = 4.1$

18. $8^{y+4} > 15$

19. $7.6^{d+3} = 57.2$

20. $0.5^{t-8} = 16.3$

21. $42^{x^2} = 84$

22. $5^{x^2+1} = 10$

Express each logarithm in terms of common logarithms. Then approximate its value to four decimal places.

23. $\log_3 7$

24. $\log_5 66$

25. $\log_2 35$

26. $\log_6 10$