

DIRECTIONS: Simplify each logarithm.

1. $\log_5 125$

2. $\log_4 16$

3. $\log_3 81$

4. $\log_6 6$

5. $\log_3 1$

6. $\log_8 4$

7. $\log_5 \frac{1}{25}$

8. $\log_2 \frac{1}{8}$

9. $\log_6 6\sqrt{6}$

10. $\log_5 25\sqrt{5}$

11. $\log_4 \sqrt{2}$

12. $\log_{27} \sqrt{3}$

13. $\log_7 \sqrt[3]{49}$

14. $\log_3 \sqrt[5]{9}$

15. $\log_{1/2} 8$

16. $\log_{1/3} 27$

17. $\log_2 \sqrt[3]{\frac{1}{4}}$

18. $\log_{10} \frac{1}{\sqrt{1000}}$

DIRECTIONS: Solve for x .

19. $\log_7 x = 2$

20. $\log_6 x = 3$

21. $\log_9 x = -\frac{1}{2}$

22. $\log_6 x = 2.5$

23. $\log_4 x = -\frac{3}{2}$

24. $\log_{1/9} x = -\frac{1}{2}$

25. $\log_x 27 = \frac{3}{2}$

26. $\log_x 64 = 6$

27. $\log_x 7 = -\frac{1}{2}$

28. $\log_x 7 = 1$

29. $\log_x 1 = 0$

30. $\log_x 2 = 0$