

Logs and Exponential Practice

Solve for the indicated variable:

1. Solve for r: $V = \frac{4}{3}\pi r^3$

2. Solve for h: $SA = 2\pi r^2 + 2\pi rh$

3. Solve for p: $(y - k) = \frac{1}{4p}(x - h)^2$

Evaluate:

4. $n^{\log_n 3}$

5. $14^{\log_{14} 6}$

Solve:

6. $\log_6 x + \log_6 9 = \log_6 54$

7. $\log_8 48 - \log_8 x = \log_8 4$

8. $\log_7 x = \frac{2}{3}\log_7 8$

9. $\log_3 x = \frac{1}{4}\log_3 16 + \frac{1}{3}\log_3 64$

10. $\log_9(3x + 14) - \log_9 5 = \log_9 2x$

11. $\log_6 x + \log_6 x - \log_6 3 = \log_6 12$

12. $4\log_2 x + \log_2 5 = \log_2 405$

13. $\log_6(2x - 5) + 1 = \log_6(7x + 10)$

14. $\log_{16}(9x + 5) - \log_{16}(x^2 - 1) = \frac{1}{2}$

15. $\log_8(x - 3) + \log_8(x + 4) = 1$

16. $\log_6(3x + 7) - \log_6(x + 4) = 2\log_6 6 - 3\log_6 3$

17. $\log_2(2x + 8) - \log_2(2x^2 + 21x + 61) = -3$

18. $3.5^x = 47.9$

19. $8.2^x = 64.5$

20. $7.2^{x-4} = 8.21$

21. $2^{x+1} = 7.31$

22. $4^{2x} = 4^{x+2}$

23. $e^{3x} = e^{2x+1}$

24. $9^x = 3^{x+4}$

25. $6^x = \left(\frac{1}{216}\right)^{x-4}$

26. $4^{2x} = 9^{x-1}$

27. $e^{3x} = 6$

28. $6^{x-2} = 4^{3-x}$

29. $7x^{\frac{9}{8}} = 111$

30. $\sqrt[4]{3^{4x+5}} = 7^x$