

No calculators for problems 1-27!!

Find the inverse of each function.

1. $g(x) = \frac{8}{x-3}$ 2. $h(x) = \frac{3x-2}{4}$ 3. $f(x) = \frac{7}{x} + 3$ Find: 4. $g^{-1}(2)$ 5. $h^{-1}(-3)$ 6. $f^{-1}(4)$

Rewrite in log or exponential form.

7. $\log_3 x = 12$ 8. $3^x = w$ 9. $\log x = 1$ 10. $64^x = 8$ 11. $\log_c 40 = 8$ 12. $b^9 = 123$

Solve for x .

13. $\log_2 \frac{1}{64} = x$ 14. $\log x = 4$ 15. $\log_{16} x = \frac{3}{2}$ 16. $\log_{81} 9 = x$ 17. $\log_x 5 = \frac{1}{2}$
18. $\log_7 1 = x$ 19. $\log_x 100 = -2$ 20. $\log_6 4 + \log_6 (x+5) = 2$ 21. $\log_2 (x+7) - \log_2 5 = 3$

Write as a single logarithm.

22. $\log_4 3 + 2\log_4 y$ 23. $2\log 6 - 3\log 4$ 24. $\frac{1}{3}\log_x 6 - \log_x 16$

Expand.

25. $\log 5x^3$ 26. $\log_3 \left(\frac{x^4}{5} \right)$ 27. $\log (6\sqrt{x})$

Solve for x . Find the exact answer, then round to three decimal places.

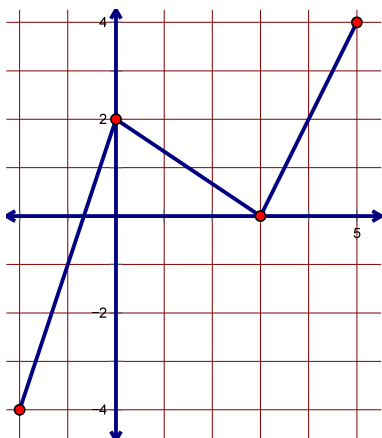
28. $12^{x+3} = 162$ 29. $52^x = 14$ 30. $2^{3x} = 21$ 31. $5^{2x-1} = 81$ 32. $3(7)^{x-4} = 240$

33. You have \$2000 to invest in an account that earns 7.5% interest, compounded annually. Write an exponential equation to model the situation, then find when the account will be worth \$7500.

Sketch a complete graph.

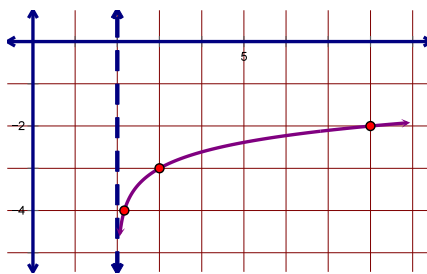
34. $a(x) = \log_3 (x-4) - 2$ 35. $b(x) = -\log_2 (x+3)$ 36. $c(x) = \log(-x) + 4$

37. Sketch the graph of the inverse.



Write the equation of the function.

38. Base 6



39. Base 4

