

# Solving: *Logarithm Equations*

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Solve the equation. (Hint: Check your answers with the ORIGINAL problem)

1.  $\log_3 x = 2$

7.  $\log(4x + 60) = 2$

2.  $\ln x = 4$

8.  $\ln(x + 3) = 2$

3.  $\log(x^2 + 21x) = 2$

9.  $\log_3(x^2 - 15) = 0$

4.  $\log_2 x + \log_2(x + 6) = 4$

10.  $\log_3(x + 2) - \log_3 5 = 2$

5.  $\log(x - 2) - \log x = 1$

11.  $\log_4(2x + 3) = 2\log_4(x)$

6.  $\log_2(x - 1) + \log_2(x + 5) = 4$

12.  $\log_2 x + 5 = 3$

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**ANSWERS:**

1.  $x = 9$

4.  $x = 2$

7.  $x = 10$

10.  $x = 43$

2.  $x = e^4$   
 $x \approx 54.598$

5. No solution

8.  $x = e^2 - 3$   
 $x \approx 4.389$

11.  $x = 3$

3.  $x = -25,4$

6.  $x = 3$

9.  $x = -4,4$

12.  $x = \frac{1}{4}$