

Solving Logarithmic Equations (Assignment 38)

Think. Solve.

1.  $\log_x 5 = 3$

2.  $5 + 2 \log_2 x = 9$

3.  $\log_3 \sqrt{x} - \log_3 9 = -1$

4.  $\log_2(\log_2 x) = 1$

5.  $\log_3 x + \log_3(x + 2) = 1$

6.  $\log_2 x = 3 + \log_2(x - 1)$

7.  $\log_3 x + \log_3(x - 6) = 3$

8.  $\log x^2 = \log(2x - 1)$

$$9. \quad 2 \log_7 x = \log_7 12$$

$$10. \quad 2 \log_a x = \log_a 4 + \log_a (x - 1)$$

$$11. \quad \log_6 6^x = \log_6 36 - \log_6 \frac{1}{6}$$

$$12. \quad \ln(x - 2) + \ln(2x - 3) = 2 \ln x$$

$$13. \quad \log_{1.7} x + \log_{1.7}(x^2 - 8) = \log_{1.7} 8x$$

$$14. \quad \log_2 x^2 = (\log_2 x)^2$$