

Log Equations Part 3

Solve each equation.

1) $\log_4 7 + \log_4 -2x = \log_4 6$

~~$\log_4 (-14x) = \log_4 6$~~

$$\frac{-14x}{-14} = \frac{6}{-14}$$

$$x = \frac{-3}{7}$$

3) $\log_6 8 + \log_6 -2x = 3$

$$\log_6 (-16x) = 3$$

$$(6^3) = -16x$$

$$216 = \frac{-16x}{-16}$$

$$\frac{-27}{2} = x$$

5) $\log_5 (x-8) - \log_5 7 = 1$

2) $\log_3 5x - \log_3 7 = 1$

4) $\log_3 (x-6) - \log_3 7 = 3$

$$\log_3 \left(\frac{x-6}{7} \right) = 3$$

$$(3^3) = \frac{x-6}{7}$$

$$27 = \frac{x-6}{7}$$

$$x-6 = 189$$

$$x = 195$$

6) $\ln (x+6) + \ln 3 = 2$

$$\ln (3x+18) = 2$$

$$e^2 = 3x+18$$

$$7.389 = 3x+18$$

$$\frac{-10.61}{3} = \frac{3x}{3}$$

$$-3.536 = x$$

7) $\log_9 (x-3) - \log_9 3 = \log_9 2$

8) $\log_7 2x - \log_7 4 = 2$

9) $\log_{10} (x-9) + \log_{10} 8 = 2$

10) $\log_5 -3x + \log_5 6 = \log_5 44$

11) $\log (x+6) + \log 5 = 3$

12) $\log_2 2x + \log_2 9 = 5$

13) $\log_8 (-5x) - \log_8 10 = 2$

14) $\log_8 4x + \log_8 7 = 1$

15) $\log_7 (-x) - \log_7 8 = 1$

16) $\log_6 -5x + \log_6 8 = 1$