

Algebra 3 Assignment # 5

Logarithmic Equations

Solve for x please.

(1) $\log_3(2x+1) = \log_3(3x-6)$

(9) $\frac{1}{2}\log_9 144 - \frac{1}{3}\log_9 8 = \log_9 x$

(2) $\log_{10}(x^2 + 36) = \log_{10}(100)$

(10) $\log_{10} 7 + \log_{10}(x-2) = \log_{10} 6x$

(3) $\log_9(x^2 + 9x) = \log_9(10)$

(11) $\log_2 15 + \log_2 14 - \log_2 105 = \log_2 x$

(4) $\log_5(4x-4) = \log_5(100)$

(12) $\log_3 16 = -4\log_3 x$

(5) $\log_7(5x-1) = \log_7(3x+7)$

(13) $\log_4(x+2) + \log_4(x-4) = 2$

(6) $\log_3 7 + \log_3 x = \log_3 14$

(14) $\log_{10}(x-1) + \log_{10}(x+2) = \log_4 4$

(7) $\log_4 x - \log_4 2 = \log_4 12$

(15) $\log_3(x+3) + \log_3(x-3) = \log_3(16)$

(8) $\log_5 x = 3\log_5 4$

(16) $\log_8(x+1) - \log_8(x) = \log_8(4)$

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Answers

(1) 7

(9) 6

(2) ± 8

(10) 14

(3) -10 , 1

(11) 2

(4) 26

(12) $\frac{1}{2}$

(5) 4

(13) 6

(6) 2

(14) 3

(7) 24

(15) 5

(8) 64

(16) $\frac{1}{3}$