

Logarithms WS #5

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Solve each equation.

1) $\log_6 (x - 3) - \log_6 8 = 1$

2) $\log_7 3x + \log_7 2 = 1$

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

4) $\log_4 (4x - 5) + \log_4 5 = \log_4 78$

5) $\log_4 (2x - 6) + \log_4 9 = 4$

6) $\log_4 3 + \log_4 (-x - 1) = 3$

7) $\log_9 2 - \log_9 -4x = 1$

8) $\log_9 3 - \log_9 (x - 2) = 1$

$$9) \log_2 10 - \log_2 -4x = 2$$

$$10) \log_9 8 - \log_9 (-2x - 8) = 1$$

$$11) \log_9 4 - \log_9 (3x - 6) = \log_9 12$$

$$12) \log_2 (x + 6) - \log_2 (x + 1) = 1$$

$$13) \log_4 (x^2 - 4) - \log_4 9 = \log_4 69$$

$$14) \log_7 4x^2 + \log_7 9 = 2$$

$$15) \log_6 3x^2 - \log_6 2 = 1$$

$$16) \log_5 (x^2 + 1) - \log_5 2 = 2$$

$$17) \log_8 (2x^2 - 2) - \log_8 2 = 1$$

$$18) \log_7 (4x^2 + 10) - \log_7 2 = 1$$

$$19) \log_8 (2x^2 - 10) - \log_8 2 = \log_8 59$$

$$20) \log_3 (b^2 - 45) = \log_3 (2b + 3)$$

$$21) \log_{19} (15v + 2) = \log_{19} (v^2 + 58)$$

$$22) \log_9 (64 - 3x) = \log_9 (x^2 - 3x)$$

$$23) \log_6 (24 + 2x^2) = \log_6 (3x^2 + 2x)$$

$$24) \log (n^2 - 47) = \log (-4n - 2)$$

Use a calculator to approximate each to the nearest thousandth.

$$25) \log 23$$

$$26) \log_5 47$$

$$27) \log_7 52$$

$$28) \log_7 2.9$$

$$29) \log_3 68$$

$$30) \log_3 23$$