

Logarithmic Equations

Solve each equation. Round your answers to the nearest ten-thousandth.

1) $\log x - \log 2 = \log 17$

2) $\log 8 + \log x = 1$

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

4) $\log x - \log 2 = 1$

Solve each equation.

5) $\log_8 (x^2 - 1) - \log_8 3 = 1$

6) $\log 3x^2 - \log 3 = 2$

7) $\log_8 4x - \log_8 5 = \log_8 39$

8) $\log_7 (x + 4) - \log_7 x = 3$

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

10) $\ln (3x - 1) + \ln 4 = \ln 15$

11) $\ln (10 - 2x^2) - \ln 5 = \ln 2$

12) $\ln 5 - \ln (4 - 4x) = \ln 33$

Logarithmic Equations

Solve each equation. Round your answers to the nearest ten-thousandth.

1) $\log x - \log 2 = \log 17$

 $\{34\}$

2) $\log 8 + \log x = 1$

 $\{1.25\}$

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

 $\{33.3333\}$

4) $\log x - \log 2 = 1$

 $\{20\}$

Solve each equation.

5) $\log_8 (x^2 - 1) - \log_8 3 = 1$

 $\{5, -5\}$

6) $\log 3x^2 - \log 3 = 2$

 $\{10, -10\}$

7) $\log_8 4x - \log_8 5 = \log_8 39$

 $\left\{\frac{195}{4}\right\}$

8) $\log_7 (x + 4) - \log_7 x = 3$

 $\left\{\frac{2}{171}\right\}$

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

 $\left\{\frac{-e^4 + 45}{18}\right\}$

10) $\ln (3x - 1) + \ln 4 = \ln 15$

 $\left\{\frac{19}{12}\right\}$

11) $\ln (10 - 2x^2) - \ln 5 = \ln 2$

 $\{0\}$

12) $\ln 5 - \ln (4 - 4x) = \ln 33$

 $\left\{\frac{127}{132}\right\}$