

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

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