

Equations with Logarithms

- a) $5^{2-x} = 10$
- b) $3^{x+2} = 5^{3-2x}$
- c) $\log(x-3) = 2$
- d) $\log x^2 = 0$
- e) $2 \ln x + 1 = 0$
- f) $\log(x+1) + \log(x-2) = 1$
- g) $\log_3 2 + 2 \log_3 x = \log_3(7x-3)$
- h) $\ln(2x+10) = 2 \ln 2$
- i) $\log(x+1) + \log(x-1) = \log 8$
- j) $\log_3(2x+1) - \log_3(x-1) = 1$
- k) $\ln(x^2 - 9) = 0$
- l) $\log \ln x = 0$
- m) $\log \log x = 1$
- n) $\log_2 \frac{x+1}{x-1} + 1 = 0$
- o) $\log_3(2x) - \log_3(x-3) = 1$
- p) $2 \log_4 x - \log_4(x-1) = 1$
- q) $\log(x+2) + \log(x-1) = 1$
- r) $\log x + \log(x-1) = \log(3x+12)$
- s) $\ln 10 - \ln(7-x) = \ln x$
- t) $\log_2(x^2 - 6x) = 3 + \log_2(1-x)$

More Logarithmic Equations**Skip This Page**

1. $x^{\log x} = 10000$

2. $\log \log \log x = 0$

3. $\sqrt{x^{\log \sqrt{x}}} = 10$

4. $2\log_6(2+x) + \log_6(9-6x+x^2) = 2$

5. $\frac{1}{2}\log(x-9) + \log\sqrt{2x+1} = 1$

6. $x^{\log x - 3} = 0.01$

7. $x^{\frac{\log x}{4} + 7} = 10^{\log x + 1}$

8. $81^{2 - \log_{\sqrt{3}} x} - 1 = 0$

9. $5^{\log x} - 3^{\log x - 1} = 3^{\log x + 1} - 5^{\log x - 1}$

10. $2\log x > \log(4x + 21)$

11. $\log_{x-1}(5x+3) > 1$

12. $\log_2(x^2 - 9x + 8) < 3$

13. $\frac{\log^2 x + \log x - 3}{2\log x - 1} > 1$

14.
$$\begin{cases} x - y = 90 \\ \log x + \log y = 3 \end{cases}$$

15.
$$\begin{cases} y - \log_3 x = 1 \\ x^y = 3^{12} \end{cases}$$

16.
$$\begin{cases} x^{\log y} = 100 \\ \log_y x = 2 \end{cases}$$