

Logarithm - Solve

L1MS3

Solve for x.

Example 1:

$$\begin{aligned}\log_3 \left(\frac{1}{3}\right) &= x \\ 3^x &= \left(\frac{1}{3}\right) \\ 3^x &= 3^{-1} \\ x &= -1\end{aligned}$$

Example 2:

$$\begin{aligned}\log_{25} 5^{-3} &= x \\ 25^x &= 5^{-3} \\ 5^{2x} &= 5^{-3} \\ x &= -\frac{3}{2}\end{aligned}$$

Solve for x.

1) $\log_{49} 7 = x$

x =

2) $\log_x 81^{\frac{1}{2}} = 2$

x =

3) $\log_{81} \left(\frac{1}{3}\right) = x$

x =

5) $\log_{\frac{1}{32}} \left(\frac{1}{2}\right) = x$

x =

7) $\log_x 5 = \left(\frac{1}{2}\right)$

x =

9) $\log_8 x = 3$

x =

10) $\log_x 2^{-4} = -1$

x =

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Solve for x.

1) $\log_{49} 7 = x$

x = $\frac{1}{2}$

2) $\log_x 81^{\frac{1}{2}} = 2$

3) $\log_{81} \left(\frac{1}{3}\right) = x$

x = $-\frac{1}{4}$

5) $\log_{\frac{1}{32}} \left(\frac{1}{2}\right) = x$

x = $\frac{1}{5}$

7) $\log_x 5 = \left(\frac{1}{2}\right)$

x = **25**

10) $\log_x 2^{-4} = -1$

x = **16**

9) $\log_8 x = 3$

x = **512**

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