

**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 = 

# PREVIEW

Gain complete access to the largest  
collection of worksheets in all subjects!

Members, please  
log in to  
download this  
worksheet.

Not a member?  
Please sign up to  
gain complete  
access.

[www.mathworksheets4kids.com](http://www.mathworksheets4kids.com)

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

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**

x = **343**

9)  $\log_8 x = 3$

x = **512**

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

x = **16**

**PREVIEW**

Gain complete access to the largest collection of worksheets in all subjects!

Members, please log in to download this worksheet.

Not a member? Please sign up to gain complete access.

[www.mathworksheets4kids.com](http://www.mathworksheets4kids.com)