

**Logarithm - Solve**

L1MS2

Solve for x.

Example 1:

$$\begin{aligned}\log_{81} 9 &= x \\ 81^x &= 9 \\ 9^{2x} &= 9 \\ x &= \frac{1}{2}\end{aligned}$$

Example 2:

$$\begin{aligned}\log_x 2^{-2} &= -1 \\ x^{-1} &= 2^{-2} \\ x &= 4\end{aligned}$$

Solve for x.

1)  $\log_2 x^{\frac{1}{5}} = 2$

x = 

2)  $\log_x 5 = \frac{1}{2}$

3)  $\log_{128} \left(\frac{1}{4}\right) = x$

x = 

5)  $\log_{\frac{1}{8}} \left(\frac{1}{4}\right) = x$

x = 

7)  $\log_x 6 = \frac{1}{3}$

x = 

9)  $\log_5 x = 3$

x = 

10)  $\log_{27} 3^{-2} = x$

x = 

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Solve for x.

Example 1:

$$\begin{aligned}\log_{81} 9 &= x \\ 81^x &= 9 \\ 9^{2x} &= 9 \\ x &= \frac{1}{2}\end{aligned}$$

Example 2:

$$\begin{aligned}\log_x 2^{-2} &= -1 \\ x^{-1} &= 2^{-2} \\ x &= 4\end{aligned}$$

Solve for x.

1)  $\log_2 x^{\frac{1}{5}} = 2$

x = **1024**

2)  $\log_x 5 = \frac{1}{2}$

3)  $\log_{128} \left(\frac{1}{4}\right) = x$

x =  **$-\frac{2}{7}$**

5)  $\log_{\frac{1}{8}} \left(\frac{1}{4}\right) = x$

x =  **$\frac{2}{3}$**

7)  $\log_x 6 = \frac{1}{3}$

x = **216**

x = **2**

9)  $\log_5 x = 3$

x = **125**

10)  $\log_{27} 3^{-2} = x$

x =  **$-\frac{2}{3}$**

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