

Logarithm - Solve

L2ES1

Solve for x.

Example 1:

$$\begin{aligned}\log_{x-1} 27 &= 3 \\ (x-1)^3 &= 27 \\ (x-1)^3 &= 3^3 \\ x-1 &= 3 \\ x &= 4\end{aligned}$$

Example 2:

$$\begin{aligned}\log_4 \left(\frac{1}{16}\right) &= 2x \\ 4^{2x} &= \frac{1}{16} \\ 4^{2x} &= 4^{-2} \\ x &= -1\end{aligned}$$

Solve for x.

1) $\log_{5x} 25 = 1$

x =

2) $\log_3 (x+3) = 4$

3) $\log_7 49 = 2x+6$

x =

5) $\log_2 8 = 3x$

x =

7) $\log_5 \left(\frac{x}{2}\right) = 3$

x =

9) $\log_{2x} 144 = 2$

x =

10) $\log_2 (3x+2) = 5$

x =

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