

Evaluating Expressions

L1MS1

Example :

Evaluate the expression : $\log_2 8^{-1}$

$$\begin{aligned}\log_2 8^{-1} &= \log_2 2^{-3} \\ &= -3 \log (1) \\ &= -3\end{aligned}$$

$$\log_a b^c = c \log_a b$$

$$\log_a a = 1$$

Evaluate each expression.

1) $\log_3 9^{-4}$

Answer

2) $\log_{27} 3$

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

Answer

5) $-2 \log_4 64$

Answer

7) $\log_{\frac{1}{3}} 27$

Answer

10) $\log_{\frac{1}{2}} \left(\frac{1}{32}\right)$

Answer

9) $\log_{81} 9^{-1}$

Answer

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2) $\log_{27} 3$

 $\frac{1}{3}$

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

Answer

-3

5) $-2 \log_4 64$

Answer

2

7) $\log_{\frac{1}{3}} 27$

Answer

-3

10) $\log_{\frac{1}{2}} \left(\frac{1}{32}\right)$

Answer

5

9) $\log_{81} 9^{-1}$

Answer

 $-\frac{1}{2}$

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