

## Evaluating Expressions

L1MS1

Example :

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

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

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

$$\log_a a = 1$$

**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

**Evaluating Expressions**

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Example :

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

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

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

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**Evaluate each expression.**

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

Answer

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

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Answer

 $4$ 

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

Answer

 $-\frac{1}{2}$ 

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

Answer

 $5$ **PREVIEW**

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