

Evaluating Expressions

L1MS2

Example :

Evaluate the expression : $3 \log_{64} 2$

$$\begin{aligned} 3 \log_{64} 2 &= \log_{64} 2^3 \\ &= \log_{64} 8 \\ &= \log_{64} (64)^{\frac{1}{2}} \\ &= \frac{1}{2} \end{aligned}$$

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

$$\log_a a = 1$$

Evaluate each expression.

1) $\log_{125} \left(\frac{1}{5}\right)$

Answer

2) $\log_{16} 4$

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3) $\log_{128} 2$

Answer

5) $\log_8 2^{-6}$

Answer

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

Answer

9) $\log_{27} 3$

Answer

10) $-4 \log_{81} 3$

Answer

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Answer

2) $\log_{16} 4$

 $\frac{1}{2}$

3) $\log_{128} 2$

Answer

2

5) $\log_8 2^{-6}$

Answer

3

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

Answer

5

10) $-4 \log_{81} 3$

Answer

1

9) $\log_{27} 3$

Answer

 $\frac{1}{3}$

Answer

-1

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