

Evaluating Expressions

L1DS2

Example :

Evaluate the expression : $\log_{\frac{1}{4}} 16^{-2}$

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

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

$$\log_a a = 1$$

Evaluate each expression.

1) $\log_5 25^{-8}$

Answer

2) $\log_{\frac{1}{16}} 4^{-6}$

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

Answer

4) $4 \log_{36} 6$

Answer

5) $\log_{\frac{1}{2}} 16^{-2}$

Answer

Answer

6) $\log_7 49^3$

Answer

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

Answer

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

Answer

-3

5) $4 \log_{36} 6$

Answer

-4

7) $\log_{\frac{1}{2}} 16^{-2}$

Answer

8

Answer

-10

9) $\log_7 49^3$

Answer

6

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

Answer

 $\frac{1}{5}$

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