

Evaluating Expressions

Example :

Evaluate the expression : $\log_4 16 - 3 \log_7 49$

$$\begin{aligned} \log_4 16 - 3 \log_7 49 &= \log_4 4^2 - 3 \log_7 7^2 \\ &= 2 \log_4 4 - 6 \log_7 7 \\ &= 2(1) - 6(1) \\ &= -4 \end{aligned}$$

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

$$\log_a a = 1$$

Evaluate each expression.

1) $\frac{3 \log_7 49}{\log_4 64}$

Answer

2) $\log_5 125 + 8 \log_2 16$

128

3) $\left(\frac{1}{4}\right) \log_4 16 - \log_2 64$

Answer

264

5) $\frac{\log_6 36}{\log_7 49}$

Answer

7) $\log_{11} 121 - 2 \log_2 16$

Answer

Answer

9) $4 \log_2 32 - \log_5 25$

Answer

Answer

10) $\log_9 81 \cdot \log_3 9$

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Evaluate each expression.

1) $\frac{3 \log_7 49}{\log_4 64}$

Answer

2) $\log_5 125 + 8 \log_2 16$

35

3) $\left(\frac{1}{4}\right) \log_4 16 - \log_2 128$

Answer

128

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 $\frac{7}{2}$

5) $\frac{\log_6 36}{\log_7 49}$

Answer

 $2 \cdot 64$

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 $\frac{13}{2}$

7) $\log_{11} 121 - 2 \log_2 8$

Answer

-2

Answer

8

9) $4 \log_2 32 - \log_5 25$

Answer

18

10) $\log_9 81 \cdot \log_3 9$

Answer

4