Evaluating Expressions

Example :
Evaluate the expression : $\log_{\frac{1}{2}} 4^3 + \log_{\frac{1}{3}} 9$

$\log_{\frac{1}{2}} 4^3 + \log_{\frac{1}{3}} 9 = 3 \log_{\frac{1}{2}} 2^2 + \log_{\frac{1}{3}} 3^2$

$= -6 \log_{\frac{1}{2}} \left(\frac{1}{2}\right) + (-2) \log_{\frac{1}{3}} \left(\frac{1}{3}\right)$

$= -8$

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

$\log_a a = 1$

Evaluate each expression.

1) $\left(\frac{1}{2}\right) \log_{\frac{1}{5}} 25 - \log_9 3$

Answer

2) $\log_{\frac{1}{4}} \left(\frac{1}{16}\right) \cdot \log_{16} 2$

3) $\dfrac{\log_3 27}{4 \log_{\frac{1}{8}} 2}$

Answer

49

5) $\log_{\frac{1}{6}} 216 + \log_{\frac{1}{5}}$

Answer

7) $\log_{\frac{1}{7}} 49 \cdot \log_{\frac{1}{4}} 16$

Answer

Answer

9) $\log_{27} 3 + 6 \log_{\frac{1}{8}} 2$

Answer

10) $\log_8 64 - \log_{\frac{1}{6}} 36$

Answer