

Evaluate the logarithm without using a calculator. Show work to support your answer.

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|----------------------------|-----------------------|--------------------------------|
| 15] $\log_9 81 =$ | 16] $\log_{27} 3 =$ | 17] $\log_4 32 =$ |
| 18] $\log_8 1 =$ | 19] $\ln e^4 =$ | 20] $\log_8 4 =$ |
| 21] $\log_3 \frac{1}{3} =$ | 22] $\log 1000 =$ | 23] $\log_{\frac{1}{2}} 128 =$ |
| 24] $\log_4 2 =$ | 25] $\log_{25} 125 =$ | 26] $\log_3 \frac{1}{243} =$ |
| 27] $\log_4 64 =$ | 28] $\log_{64} 4 =$ | 29] $\log_6 \frac{1}{216} =$ |