

Evaluating Logarithmic Expressions

Evaluate each expression.

1) $\frac{\log_7 49}{8 \log_{\frac{1}{3}} 9}$

2) $2 \log_2 8 + \log_{\frac{1}{8}} 2$

3) $\frac{1}{9} \log_3 27 - \log_6 36$

4) $\log_{\frac{1}{4}} \left(\frac{1}{64} \right) \cdot \log_2 32$

5) $\log_{\frac{1}{7}} 49 + \log_5 125$

6) $\frac{4 \log_4 8}{6 \log_3 9}$

7) $\log_{\frac{1}{9}} \left(\frac{1}{3} \right) \cdot 9 \log_{12} 144$

8) $\log_{\frac{1}{2}} 16 - \log_{\frac{1}{5}} \left(\frac{1}{25} \right)$

9) $7 \log_4 \left(\frac{1}{2} \right) + \log_6 216$

10) $\log_6 36 \cdot 3 \log_8 2$
