

Simplify $\log_4 3 - \log_4 48$

Solution:

$$\begin{aligned}\log_4 3 - \log_4 48 &= \log_4 3 - \log_4 3 * 16 = \log_4 3 - (\log_4 3 + \log_4 16) \\ &= \log_4 3 - \log_4 3 - \log_4 4^2 = -2 \log_4 4 = -2\end{aligned}$$

Answer: -2