

Precalculus

**Compute logarithm of a power of the base,
radical notation**

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Example

Compute the exact value of the expression as a rational number.

$$\begin{aligned}\log_7 \sqrt[3]{49} &= \log_7 \left(49^{\frac{1}{3}} \right) \\ &= \frac{1}{3} \log_7 49 \\ &= \frac{1}{3} \log_7 7^2 \\ &= \frac{2}{3} \log_7 7 \\ &= \frac{2}{3}\end{aligned}$$