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$\log_5 \sqrt[5]{5} = \log_5 5^{\frac{1}{5}} = \frac{1}{5}$

$\log_a (a^x) = x$

$\log_{\frac{1}{2}} \frac{\sqrt{2}}{2} = \log_{\frac{1}{2}} \frac{2^{\frac{1}{2}}}{2} = \log_{\frac{1}{2}} 2^{\frac{1}{2}-1} = \log_{\frac{1}{2}} 2^{-\frac{1}{2}} =$

$= \log_{\frac{1}{2}} \left(\frac{1}{2}\right)^{\frac{1}{2}} = \frac{1}{2}$

$2^{-\alpha} = \left(\frac{1}{2}\right)^{\alpha}$

$\log_3 \frac{3\cdot\sqrt{3}}{\sqrt[3]{9}} = \log_3 \frac{3\cdot 3^{\frac{1}{2}}}{3^{\frac{2}{3}}} = \log_3 3^{1+\frac{1}{2}-\frac{2}{3}} = 1 + \frac{1}{2} - \frac{2}{3} = \frac{6+3-4}{6} =$

$= \frac{5}{6}$

$\log_5 \left(0{,}2 \cdot \frac{\sqrt{5}}{5}\right) = \log_5 \left(\frac{1}{5}\cdot\frac{\sqrt{5}}{5}\right) = \log_5 5^{\frac{1}{2}-2} = \frac{1}{2} - 2 = -\frac{3}{2}$

$0{,}2 \rightarrow \frac{2}{10}$

$\log_a x = b \iff a^b = x$

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$\log_3 b = 0$

$\hookrightarrow b = 3^0 = 1$

$\log_{0,4} b = 1 \longrightarrow b = (0,4)^1 = 0,4$

$\log_5 b = -\frac{1}{3} \qquad 5^{-\frac{1}{3}} = b \rightarrow b = \frac{1}{\sqrt[3]{5}}$

$\log_{32} b = -\frac{1}{4} \qquad 32^{-\frac{1}{4}} = b \rightarrow b = \frac{1}{\sqrt[4]{32}} = \frac{1}{\sqrt[4]{2^5}} = \frac{1}{2\sqrt[4]{2}}$

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$\log_a 5 = -2 \rightarrow a^{-2} = 5$

$\frac{1}{a^2} = 5 \qquad a^2 = \frac{1}{5}$

$a = \sqrt{\frac{1}{5}} = \frac{1}{\sqrt{5}} =$

$= \frac{1}{\sqrt{5}} \cdot \frac{\sqrt{5}}{\sqrt{5}} = \frac{\sqrt{5}}{5}$

$\log_a 64 = 5 \qquad a^5 = 64$

$a = \sqrt[5]{64} = \sqrt[5]{2^6} = 2\sqrt[5]{2}$

$\log_a \frac{1}{100} = -2 \qquad a^{-2} = \frac{1}{100} \rightarrow a^2 = 100 \qquad a = 10$

$\log_a 8 = 3 \qquad a^3 = 8 \qquad a = \sqrt[3]{8} = 2$