HW 50

evaluating logs

table answers

$\log_{2.4} 1 = 0$
$\log_{4.5} 8 = 1.5$
$\log 0.00001 = -5$
$4^{-2} = 0.0625$
$x^3 = 8$
$\log_5 1/25 = -2$
$\log \pi^1 = \pi$
$10^2 = 100$

1. $\log 1000 = x$
$10^x = 1000$
$10^x = 10^3$
$\boxed{x = 3}$

2. $\log 10^4 = x$
$10^x = 10^4$
$\boxed{x = 4}$

3. $\log 1 = x$
$10^x = 1$
$\boxed{x = 0}$

4. $\log \frac{1}{10,000} = x$
$10^x = \frac{1}{10,000}$
$10^x = 10^{-4}$
$\boxed{x = -4}$

5. $\log 10^{-3} = x$
$10^x = 10^{-3}$
$\boxed{x = -3}$

6. $\log 10 = x$
$10^x = 10^1$
$\boxed{x = 1}$

7. $\log 0.01 = x$
$10^x = 0.01$
$10^x = 10^{-2}$
$\boxed{x = -2}$

8. $\log \frac{1}{1000} = x$
$10^x = \frac{1}{1000}$
$10^x = 10^{-3}$
$\boxed{x = -3}$

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* you must show work for all problems *

some examples

3. $\log_4 64 = x$
$4^x = 64$
$4^x = 4^3$
$\boxed{x = 3}$

5. $\log_x 81 = 2$
$\sqrt{x^2} = \sqrt{81}$
$\boxed{x = 9}$ * can't be -9

20. $\log_8 x = -2/3$
$8^{-2/3} = x$
$\frac{1}{8^{2/3}} = x$
$\boxed{1/4 = x}$

answer. common logger rhythms always use a base ten.