Name : _____ Score : _____

L1MS3

Logarithm - Solve

Solve for x.

Example 1:

$\log_3 \left(\frac{1}{3}\right) = x$

$3^x = \left(\frac{1}{3}\right)$

$3^x = 3^{-1}$

$x = -1$

Example 2:

$\log_{25} 5^{-3} = x$

$25^x = 5^{-3}$

$5^{2x} = 5^{-3}$

$x = -\frac{3}{2}$

Solve for x.

1) $\log_{49} 7 = x$

x = _____

2) $\log_x 81^{\frac{1}{2}} = 2$

3) $\log_{81} \left(\frac{1}{3}\right) = x$

x = _____

5) $\log_{\frac{1}{32}} \left(\frac{1}{2}\right) = x$

x = _____

7) $\log_x 5 = \left(\frac{1}{2}\right)$

x = _____

x = _____

9) $\log_8 x = 3$

x = _____

10) $\log_x 2^{-4} = -1$

x = _____

Name : _____ **Answer key** Score : _____

L1MS3

Logarithm - Solve

Solve for x.

Example 1:

$\log_3 \left(\frac{1}{3}\right) = x$

$3^x = \left(\frac{1}{3}\right)$

$3^x = 3^{-1}$

$x = -1$

Example 2:

$\log_{25} 5^{-3} = x$

$25^x = 5^{-3}$

$5^{2x} = 5^{-3}$

$x = -\frac{3}{2}$

Solve for x.

1) $\log_{49} 7 = x$

$x = \frac{1}{2}$

2) $\log_x 81^{\frac{1}{2}} = 2$

3) $\log_{81} \left(\frac{1}{3}\right) = x$

$x = -\frac{1}{4}$

5) $\log_{\frac{1}{32}} \left(\frac{1}{2}\right) = x$

$x = \frac{1}{5}$

7) $\log_x 5 = \left(\frac{1}{2}\right)$

$x = 25$

$x = 343$

9) $\log_8 x = 3$

$x = 512$

10) $\log_x 2^{-4} = -1$

$x = 16$