Algebra: Solving Logarithmic Expressions

Practice Worksheet • numberbender.com

N

Name: _____ Date: _____ Score: / 10

DIRECTIONS *Evaluate each log expression or solve for x in the logarithmic equation.*

1 Evaluate:

$$\log_9 3$$

Answer: _____

2 Solve for x:

$$\log_2 x = -3$$

Answer: _____

3 Solve for x:

$$\log_4 x = -1$$

Answer: _____

4 Solve for x:

$$\log_2 x = 5$$

Answer: _____

5 Solve for x:

$$\log_5 x = 3$$

Answer: _____

6 Evaluate:

$$\ln 1$$

Answer: _____

7 Evaluate:

$$\log_{10} 0.001$$

Answer: _____

8 Evaluate:

$$\log_4 2$$

Answer: _____

9 Evaluate:

$$\log_5 25$$

Answer: _____

10 Solve for x:

$$\log x = 2$$

Answer: _____

Answer Key & Solutions

Algebra: Solving Logarithmic Expressions • Numberbender

N

TEACHER NOTES *Convert to exponential form to solve: log_b(x)=y means b^y=x. Check for extraneous solutions.*

1 Evaluate:

$\log_9 3$

= $\frac{1}{2}$

2 Solve for x:

$\log_2 x = -3$

= $x = \frac{1}{8}$

3 Solve for x:

$\log_4 x = -1$

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

4 Solve for x:

$\log_2 x = 5$

= $x = 32$

5 Solve for x:

$\log_5 x = 3$

= $x = 125$

6 Evaluate:

$\ln 1$

= 0

7 Evaluate:

$\log_{10} 0.001$

= -3

8 Evaluate:

$\log_4 2$

= $\frac{1}{2}$

9 Evaluate:

$\log_5 25$

= 2

10 Solve for x:

$\log x = 2$

= $x = 100$