

Logarithmic Properties Practice

Write each equation in exponential form.

$$1.) \log_3 81 = 4$$

$$2.) \log_8 2 = \frac{1}{3}$$

$$3.) \log_{10} \frac{1}{100} = -2$$

$$3^4 = 81$$

$$8^{\frac{1}{3}} = 2$$

$$10^{-2} = \frac{1}{100}$$

Write each equation in logarithmic form.

$$4.) 3^3 = 27$$

$$5.) 5^{-3} = \frac{1}{125}$$

6.)

$$\frac{1}{4}^{-4} = 256$$

$$\log_3 27 = 3$$

$$\log_5 \frac{1}{125} = -3$$

$$\log_{\frac{1}{4}} 256 = -4$$

Evaluate each expression.

$$7.) \log_7 7^3$$

$$8.) \log_{10} 0.001$$

$$9.) \log_8 4096$$

$$x = 3$$

$$x = -3$$

$$x = 4$$

$$10.) \log_4 32$$

$$11.) \log_3 1$$

$$12.) \log_6 \frac{1}{216}$$

$$x = 2.5$$

$$x = 0$$

$$x = -3$$

Solve each equation.

$$13.) \log_x 64 = 3$$

$$14.) \log_4 0.25 = x$$

$$x = 4$$

$$x = -1$$

$$15.) \log_4(2x-1) = \log_4 16$$

$$16.) \log_{10} \sqrt{10} = x$$

$$x = 17/2$$

$$x = 1/2$$

$$17.) \log_7 56 - \log_7 x = \log_7 4$$

$$18.) \log_5(x+4) + \log_5 x = \log_5 12$$

x = 14

x = 2