



## Practice

### 6.3 Logarithmic Functions

Write each equation in logarithmic form.

1.  $19^2 = 361$

\_\_\_\_\_

2.  $20^3 = 8000$

\_\_\_\_\_

3.  $3375^{\frac{1}{3}} = 15$

\_\_\_\_\_

4.  $\left(\frac{3}{4}\right)^{-3} = 64$

\_\_\_\_\_

5.  $\left(\frac{3}{7}\right)^3 = \frac{27}{343}$

\_\_\_\_\_

6.  $11^{-3} = \frac{1}{1331}$

\_\_\_\_\_

Write each equation in exponential form.

7.  $\log_{12} 144 = 2$

\_\_\_\_\_

8.  $\log_5 15,625 = 6$

\_\_\_\_\_

9.  $\log_{21} 9261 = 3$

\_\_\_\_\_

10.  $\log_{3600} 60 = \frac{1}{2}$

\_\_\_\_\_

11.  $\log_{11} \frac{1}{14,641} = -4$

\_\_\_\_\_

12.  $\log_{\frac{1}{5}} 625 = -4$

\_\_\_\_\_

Solve each equation for  $x$ . Round your answers to the nearest hundredth.

13.  $10^x = 35$

\_\_\_\_\_

14.  $10^x = 91$

\_\_\_\_\_

15.  $10^x = 0.2$

\_\_\_\_\_

16.  $10^x = 1.8$

\_\_\_\_\_

17.  $10^x = 0.08$

\_\_\_\_\_

18.  $10^x = 1055$

\_\_\_\_\_

Find the value of  $v$  in each equation.

19.  $v = \log_{10} 1000$

\_\_\_\_\_

20.  $v = \log_{15} 225$

\_\_\_\_\_

21.  $v = \log_{12} 144$

\_\_\_\_\_

22.  $8 = \log_2 v$

\_\_\_\_\_

23.  $-4 = \log_5 v$

\_\_\_\_\_

24.  $-3 = \log_7 v$

\_\_\_\_\_

25.  $-2 = \log_v \frac{1}{100}$

\_\_\_\_\_

26.  $\log_v 729 = 6$

\_\_\_\_\_

27.  $\log_v \frac{1}{256} = -4$

\_\_\_\_\_



## Practice Masters Level A

### 6.3 Logarithmic Functions

Write each equation in logarithmic form.

1.  $3^4 = 81$

\_\_\_\_\_

2.  $2^6 = 64$

\_\_\_\_\_

3.  $5^{-2} = \frac{1}{25}$

\_\_\_\_\_

4.  $8^{\frac{1}{3}} = 2$

\_\_\_\_\_

5.  $\left(\frac{1}{5}\right)^4 = \frac{1}{625}$

\_\_\_\_\_

6.  $\left(\frac{1}{11}\right)^2 = \frac{1}{121}$

\_\_\_\_\_

Write each equation in exponential form.

7.  $\log_7 49 = 2$

\_\_\_\_\_

8.  $\log_{10} 10,000 = 4$

\_\_\_\_\_

9.  $\log_2 32 = 5$

\_\_\_\_\_

10.  $\log_{25} 5 = \frac{1}{2}$

\_\_\_\_\_

11.  $\log_{125} 5 = \frac{1}{3}$

\_\_\_\_\_

12.  $\log_9 9 = 1$

\_\_\_\_\_

Solve each equation for  $x$ . Round your answers to the nearest hundredth.

13.  $10^x = 100$  \_\_\_\_\_

14.  $10^x = 1$  \_\_\_\_\_

15.  $10^x = 0.1$  \_\_\_\_\_

16.  $10^x = 1040$  \_\_\_\_\_

17.  $10^x = 0.001$  \_\_\_\_\_

18.  $10^x = 2024$  \_\_\_\_\_

Find the value of  $n$  in each equation.

19.  $n = \log_{10} 10,000$

\_\_\_\_\_

20.  $n = \log_{13} 169$

\_\_\_\_\_

21.  $n = \log_{20} 400$

\_\_\_\_\_

22.  $2 = \log_5 n$

\_\_\_\_\_

23.  $4 = \log_3 n$

\_\_\_\_\_

24.  $10 = \log_2 n$

\_\_\_\_\_