

## Logarithmic Functions HW

Write each equation in logarithmic form.

1.  $5^4 = 625$

2.  $7^{-2} = \frac{1}{49}$

3.  $\left(\frac{1}{9}\right)^{-2} = 81$

Write each equation in exponential form.

4.  $\log_{10}1000 = 3$

5.  $3 = \log_7343$

6.  $-3 = \log_3 \frac{1}{27}$

Evaluate each expression. Hint—set = x and solve for x.

7.  $\log_{27}\sqrt{3}$

8.  $\log_2 16\sqrt{2}$

9.  $\log_{\frac{1}{2}} 8$

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

10.  $10^x = 12$

11.  $10^x = 1.89$

12.  $10^x = \frac{1}{1085}$

Solve for v.

13.  $v = \log_4 64$

14.  $v = \log_{17} 289$

15.  $v = \log_7 7$

16.  $v = \log_{10} 0.01$

17.  $v = \log_{10} \frac{1}{100}$

18.  $v = \log_9 1$

19.  $2 = \log_7 v$

20.  $1 = \log_3 v$

21.  $\frac{1}{3} = \log_8 v$

22.  $-3 = \log_4 v$

23.  $0 = \log_2 v$

24.  $\log_v 125 = 3$

25.  $\log_v 4 = \frac{1}{3}$

26.  $\log_v \frac{1}{8} = -3$

27.  $\log_v 243 = 5$

Find the approximate value of each logarithmic expression.

28.  $\log_{10} 79$

29.  $\log_{10} 0.9$