NAME _____ CLASS _____ DATE _____

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