Name _____ Class _____ Date _____

Practice 8-3

Logarithmic Functions as Inverses

Write each equation in exponential form.

1. $\log_4 256 = 4$
2. $\log_7 1 = 0$
3. $\log_2 32 = 5$
4. $\log 10 = 1$
5. $\log_{56} 1 = 0$
6. $\log_{12} \frac{1}{144} = -2$
7. $\log_2 \frac{1}{1024} = -10$
8. $\log_3 6561 = 8$

Write each equation in logarithmic form.

9. $9^2 = 81$
10. $25^2 = 625$
11. $8^3 = 512$
12. $13^2 = 169$
13. $4^{-3} = \frac{1}{64}$
14. $5^{-2} = \frac{1}{25}$
15. $8^{-1} = \frac{1}{8}$
16. $11^0 = 1$

Evaluate each logarithm.

17. $\log_2 16$
18. $\log_2 8$
19. $\log_2 4$
20. $\log_2 2$
21. $\log_{16} 16$
22. $\log_5 125$
23. $\log_{11} 121$
24. $\log 100$
25. $\log \frac{1}{100}$
26. $\log_3 \frac{1}{9}$
27. $\log_3 \frac{1}{27}$
28. $\log_4 32$

Graph each logarithmic function.

29. $y = \log_3 x$
30. $y = \log_6 x$