LESSON **Practice B**

7-3 *Logarithmic Functions*

Write each exponential equation in logarithmic form.

1. $3^7 = 2187$ **2.** $12^2 = 144$ **3.** $5^3 = 125$

_____   _____   _____

Write each logarithmic equation in exponential form.

4. $\log_{10} 100{,}000 = 5$ **5.** $\log_4 1024 = 5$ **6.** $\log_9 729 = 3$

_____   _____   _____

Evaluate by using mental math.

7. $\log 1{,}000{,}000$ **8.** $\log 10$ **9.** $\log 1$

_____   _____   _____

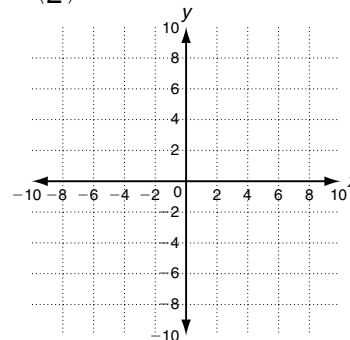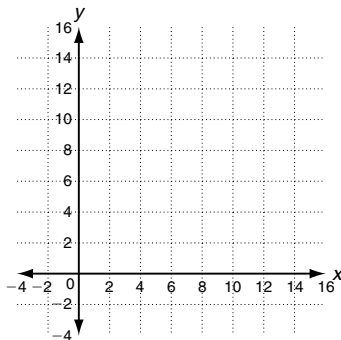**10.** $\log_4 16$ **11.** $\log_8 1$ **12.** $\log_5 625$

_____   _____   _____

Use the given *x*-values to graph each function. Then graph its inverse. Describe the domain and range of the inverse function.

13. $f(x) = 2^x$; $x = -2, -1, 0, 1, 2, 3, 4$ **14.** $f(x) = \left(\dfrac{1}{2}\right)^x$; $x = -3, -2, -1, 0, 1, 2, 3$

_____   _____

Solve.

15. The hydrogen ion concentration in moles per liter for a certain brand of tomato-vegetable juice is 0.000316.

    a. Write a logarithmic equation for the pH of the juice.   _____

    b. What is the pH of the juice?   _____

Holt Algebra 2