

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. $\log_4 16$

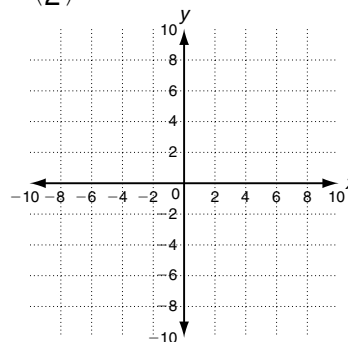
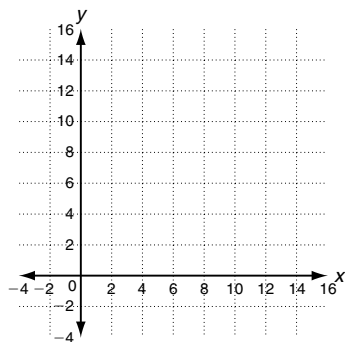
11. $\log_8 1$

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. $f(x) = \left(\frac{1}{2}\right)^x$; $x = -3, -2, -1, 0, 1, 2, 3$



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? _____