

# 7-3 Skills Practice

## Logarithms and Logarithmic Functions

Write each equation in exponential form.

1.  $\log_3 243 = 5$

2.  $\log_4 64 = 3$

3.  $\log_9 3 = \frac{1}{2}$

4.  $\log_5 \frac{1}{25} = -2$

Write each equation in logarithmic form.

5.  $2^3 = 8$

6.  $3^2 = 9$

7.  $8^{-2} = \frac{1}{64}$

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

Evaluate each expression.

9.  $\log_5 25$

10.  $\log_9 3$

11.  $\log_{10} 1000$

12.  $\log_{125} 5$

13.  $\log_4 \frac{1}{64}$

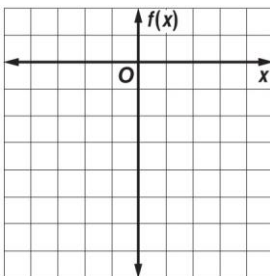
14.  $\log_5 \frac{1}{625}$

15.  $\log_8 512$

16.  $\log_{27} \frac{1}{3}$

Graph each function.

17.  $f(x) = \log_3 (x + 1) - 4$



18.  $f(x) = -\log_5 x + 2.5$

