

Day 03 Practice

Logarithms and Logarithmic Functions

Write each equation in exponential form.

1. $\log_6 216 = 3$

2. $\log_2 64 = 6$

3. $\log_3 \frac{1}{81} = -4$

4. $\log_{10} 0.00001 = -5$

5. $\log_{25} 5 = \frac{1}{2}$

6. $\log_{32} 8 = \frac{3}{5}$

Write each equation in logarithmic form.

7. $5^3 = 125$

8. $7^0 = 1$

9. $3^4 = 81$

10. $3^{-4} = \frac{1}{81}$

11. $\left(\frac{1}{4}\right)^3 = \frac{1}{64}$

12. $7776^{\frac{1}{5}} = 6$

Evaluate each expression.

13. $\log_3 81$

14. $\log_{10} 0.0001$

15. $\log_2 \frac{1}{16}$

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

17. $\log_9 1$

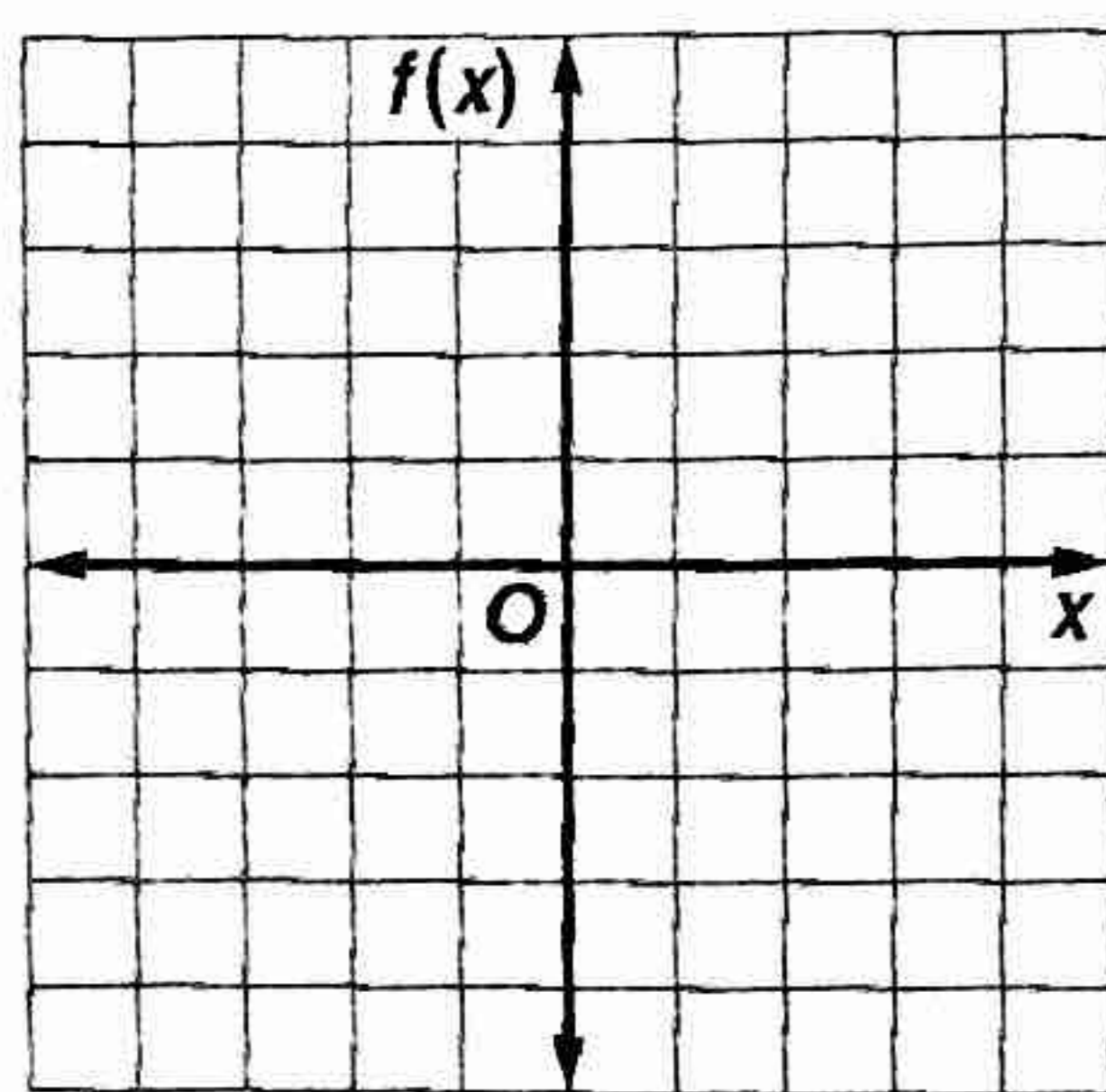
18. $\log_8 4$

19. $\log_7 \frac{1}{49}$

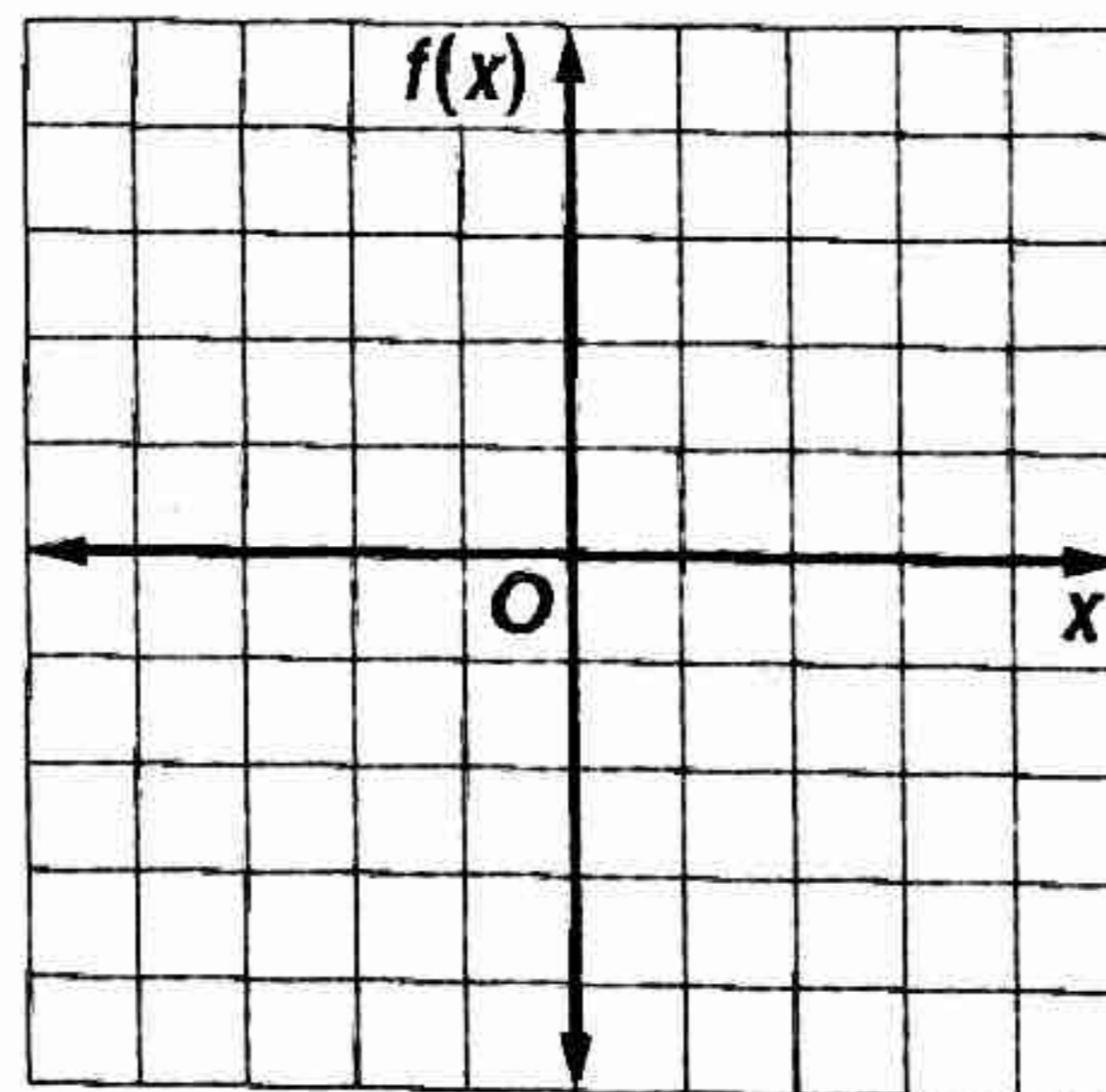
20. $\log_6 6^4$

Graph each function.

21. $f(x) = \log_2(x - 2)$



22. $f(x) = -2 \log_4 x$



23. **SOUND** An equation for loudness, in decibels, is $L = 10 \log_{10} R$, where R is the relative intensity of the sound. Sounds that reach levels of 120 decibels or more are painful to humans. What is the relative intensity of 120 decibels?

24. **INVESTING** Maria invests \$1000 in a savings account that pays 4% interest compounded annually. The value of the account A at the end of five years can be determined from the equation $\log_{10} A = \log_{10} [1000(1 + 0.04)^5]$. Write this equation in exponential form.

Day 03 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. $\log_4 \frac{1}{64}$

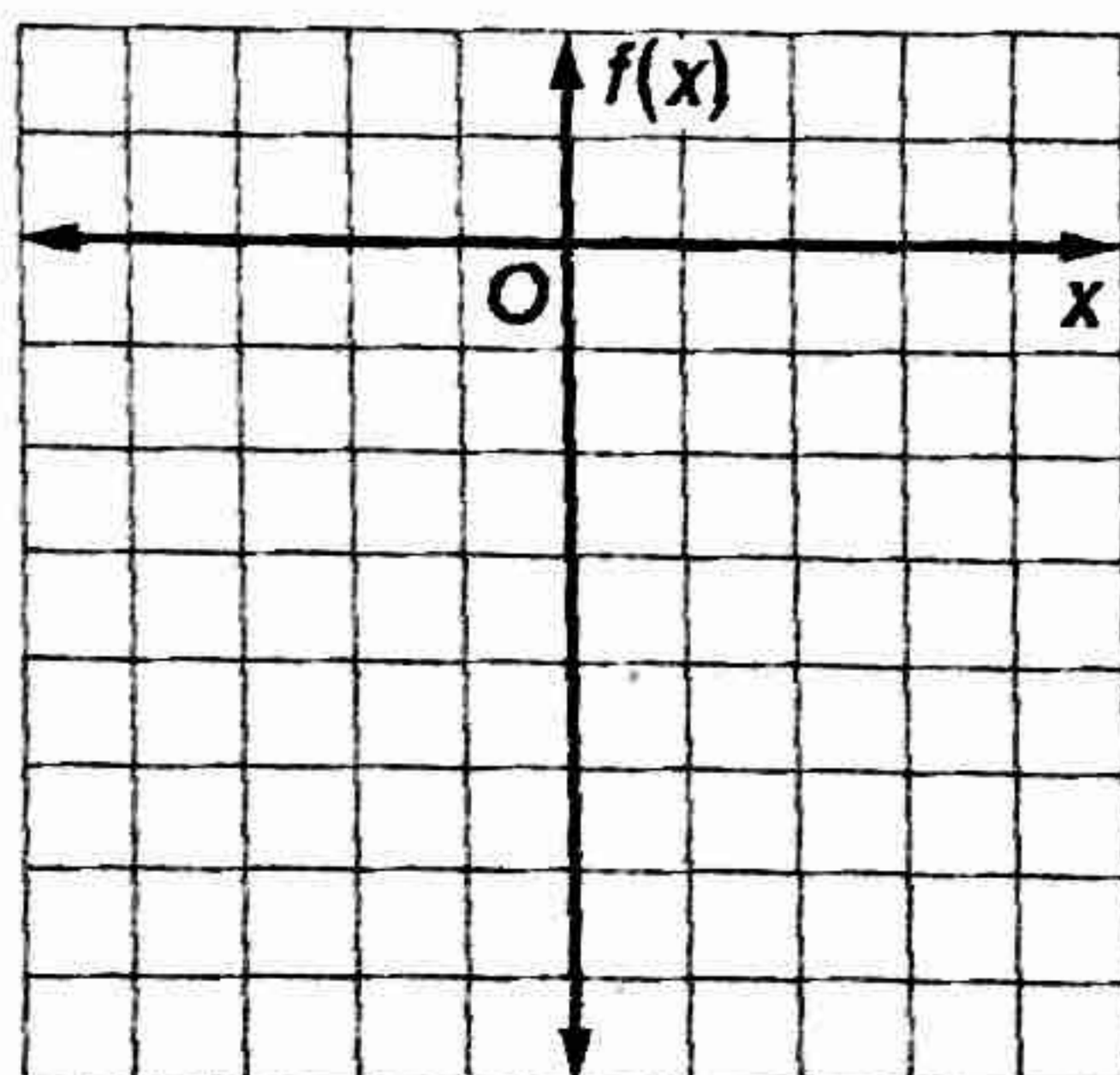
14. $\log_5 \frac{1}{625}$

15. $\log_8 512$

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

Graph each function.

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



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

