



6-3 Additional Practice

Logarithms

Complete the table.

| Exercise | Exponential Form | Logarithmic Form |
|----------|--------------------------|---------------------------------|
| 1. | $4^3 = 64$ | |
| 2. | $6^{-3} = \frac{1}{216}$ | $\log x = 35$ |
| 3. | | |
| 4. | | $\ln(3x) = 8$ |
| 5. | $1000^0 = 1$ | |
| 6. | | $\log_5 \sqrt{5} = \frac{1}{2}$ |

Solve the equation for x . Show your work.

7. $2 + \log_5 x = 3$

8. $4^{(x+2)} - 16 = 60$

9. $2 \ln(x - 5) = 25$

Evaluate each logarithmic expression.

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

11. $\log_8 8^5$

12. $\log_3(-10)$

13. $\ln(-e)$

14. $\ln e^3$

15. $\log 150$

16. Deshawn invests \$5,000 in a savings account that earns 6% annual interest, compounded continuously. How long will it take to double his money?

17. Compare the following values and determine which one is greater. Explain.

$\log_{0.5} 6$ and $\log_{0.5} 4$