

7-7 Skills Practice

Base e and Natural Logarithms

Write an equivalent exponential or logarithmic equation.

1. $e^x = 3$

2. $e^4 = 8x$

3. $\ln 15 = x$

4. $\ln x \approx 0.6931$

5. $e^4 = x - 3$

6. $\ln 5.34 = 2x$

Write each as a single logarithm.

7. $3 \ln 3 - \ln 9$

8. $4 \ln 16 - \ln 256$

9. $2 \ln x + 2 \ln 4$

10. $3 \ln 4 + 3 \ln 3$

Solve each equation or inequality. Round to the nearest ten-thousandth.

11. $e^x \geq 5$

12. $e^x < 3.2$

13. $2e^x - 1 = 11$

14. $5e^x + 3 = 18$

15. $e^{3x} = 30$

16. $e^{-4x} > 10$

17. $e^{5x} + 4 > 34$

18. $1 - 2e^{2x} = -19$

19. $\ln 3x = 2$

20. $\ln 8x = 3$

21. $\ln (x - 2) = 2$

22. $\ln (x + 3) = 1$

23. $\ln (x + 3) = 4$

24. $\ln x + \ln 2x = 2$