NAME _____ DATE _____

Practice C

For use with pages 501–508

Solve the exponential equation. Round the result to three decimal places if necessary.

1. $e^x = 9$

2. $2^{3x+1} = 4$

3. $3^{2x-5} = 7$

4. $e^{4x+1} - 3 = 8$

5. $e^{5-3x} + 4 = 6$

6. $3^{0.4x} - 7 = 10$

7. $\frac{2}{3} e^{4x} + 5 = 8$

8. $\frac{1}{4}(2^{3x+1}) - 2 = 5$

9. $\frac{5}{3} e^{1-x} + 1 = \frac{9}{2}$

10. $e^{x^2} + 3 = 4$

11. $e^{x^2+1} = e^{x+3}$

12. $2^{3x+1} = 2^{2/x}$

Solve the logarithmic equation. Round the result to three decimal places if necessary.

13. $\log(2x + 1) = 1$

14. $\ln(x + 3) - 2 = 8$

15. $\log_3(x - 2) + 5 = 7$

16. $\ln(6x + 5) = 7$

17. $\ln(x - 2) + \ln x = 0$

18. $\log_2 x + \log_2(x + 1) = 1$

19. $\log_3 x + \log_3(x - 2) = 1$

20. $\log_2(x + 1) - \log_2 x = 3$

21. $\log_4(x + 2) - \log_4(x - 3) = 2$ **22.** $\log(3x + 2) = \log(2x - 1)$

23. $\log(x^2 - 1) = \log(x + 5)$ **24.** $\log(x + 2) + \log(x - 3) = \log(x + 29)$

25. $\log_2 x + \log_2(x - 2) - \log_2(x - 3) = 3$

26. $\log_2(-x - 3) - \log_2(x - 1) - \log_2(x + 3) = 1$

Solve the exponential equation. Round the result to three decimal places.

27. $2^{x+1} = 3^{2x}$

28. $e^{x-3} = 10^{4-x}$

29. $5^{2x+1} = 2^{4x-3}$

Solve the logarithmic equation. Round the result to three decimal places.

30. $\log_2(x + 1) = \log_4(2x - 3)$

31. $\log_3(x - 3) = \log_9 x$

32. $\log(x - 4) = \log_{100}(x + 3)$

33. *Compound Interest*   You deposit $2500 into an account that pays 3.5% annual interest compounded daily. How long will it take for the balance to reach $3000?

Loan Repayment   **In Exercises 34–36, use the following information.**

The formula $L = P\left[\dfrac{1 - \left(1 + \dfrac{r}{n}\right)^{-nt}}{\dfrac{r}{n}}\right]$ gives the amount of a loan L in terms

of the amount of each payment P, the interest rate r, the number of payments per year n, and the number of years t.

34. When purchasing a home, you need a loan for $80,000. The interest rate of the loan is 8% and you are required to make monthly payments of $587. How long will it take you to pay off the loan?

35. When the loan is paid off, how much money will you have paid the bank?

36. How much did you pay in interest?

Algebra 2
Chapter 8 Resource Book