

Practice 8-5

HW: Lesson 5

Exponential and Logarithmic Equations

Use the Change of Base Formula to evaluate each expression. Round answers to the nearest hundredth.

1. $\log_2 12$

2. $\log_3 40$

3. $\log_4 8$

4. $\log_5 3$

Solve each equation. Check your answer. Round answers to the nearest hundredth.

5. $7^n = 12$

6. $5^{2x} = 20$

7. $8^{n+1} = 3$

8. $4^{n-2} = 3$

9. $4^{3n} = 5$

Solve each equation. Check your answer. Round answers to the nearest hundredth.

10. $\log 3x = 2$

11. $2 \log x - \log 5 = -2$

12. $\log 8 - \log 2x = -1$

13. $\log(x + 21) + \log x = 2$

14. $8 \log x = 16$

The function $y = 1000(1.005)^x$ models the value of \$1000 deposit at 6% per year (0.005 per month) x months after the money is deposited.

15. Predict how many years it will be until the account is worth \$5000.

Practice 8-6 HW: Lesson 5 (Continued)

Natural Logarithms

Use natural logarithms to solve each equation. Round answers to the nearest hundredth.

16. $e^x = 15$

17. $e^{x+2} = 50$

18. $e^{x-4} = 2$

19. $4e^x = 10$

20. $4e^{3x-1} = 5$

Solve each equation. Check your answer. Round answers to the nearest hundredth.

21. $4 \ln x = -2$

22. $2 \ln (3x - 4) = 7$

23. $2 \ln x + \ln x^2 = 3$

24. $\ln x - \ln 5 = -1$

25. $\ln x + \ln 3x = 14$