Name _____ **Date** _____ **Period** _____

Review

Solve each equation.

1. $3x - 7 = -5x + 9$

2. $x^2 - 5x = 14$

3. $3x^2 - 16x - 12 = 0$

4. $\sqrt{x + 9} - 13 = 21$

Change each exponential statement into an equivalent statement involving a logarithm.

5. $7 = x^2$

6. $2^{(-3)} = \dfrac{1}{8}$

7. $5^x = 8.4$

Change each logarithmic statement to an equivalent statement involving an exponent.

9. $\log_5 125 = 3$

10. $\log_8 4 = \dfrac{2}{3}$

11. $\log 6 = x$

12. $\ln x = 9$

Solve each equation. Leave answer as exact solutions. No calculators. Show work!

13. $\log_2(2x + 1) = 3$

14. $\ln e^x = 5$

15. $\log_4 64 = x$

16. $\log_3 243 = 2x + 1$

17. $e^{2x+5} = 8$

18. $\log_2 8^x = -3$

19. $2 \cdot 10^{2-x} = 5$

20. $4 \cdot e^{x+1} = 5$

21. $\log_3 x = -5$

22. $\log_x 49 = 2$

23. $3^{2x-5} = 7$

24. $10^x = e$