

11.4

SM3 Solving Logarithmic Equations 2018-19

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

7. $5^x = 8.4$

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

9. $\log_5 125 = 3$

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

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. $\ln e^x = 5$

$$15. \log_4 64 = x$$

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

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

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

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

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

$$21. \log_3 x = -5$$

$$22. \log_x 49 = 2$$

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

$$24. 10^x = e$$