

Homework 6.1: Intro to Logarithms

Directions: Answer questions #1-16 on the front, and questions #1-11 odd on the back.

Write each equation in logarithmic form.

1. $9^2 = 81$

2. $\frac{1}{64} = \left(\frac{1}{4}\right)^3$

3. $8^3 = 512$

4. $\left(\frac{1}{3}\right)^{-2} = 9$

5. $2^9 = 512$

6. $4^5 = 1024$

7. $5^4 = 625$

8. $10^{23} = 0.001$

Evaluate each logarithm.

9. $\log_2 128$

10. $\log_4 32$

11. $\log_9 (27)$

12. $\log_2 (-32)$

13. $\log_{\frac{1}{9}} \frac{1}{3}$

14. $\log 100,000$

15. $\log_7 7^6$

16. $\log_3 \frac{1}{81}$

Logarithmic Equations

Solve each equation.

1) $\log 5x = \log (2x + 9)$

2) $\log (10 - 4x) = \log (10 - 3x)$

3) $\log (4p - 2) = \log (-5p + 5)$

4) $\log (4k - 5) = \log (2k - 1)$

5) $\log (-2a + 9) = \log (7 - 4a)$

6) $2\log_7 -2r = 0$

7) $-10 + \log_3 (n + 3) = -10$

8) $-2\log_5 7x = 2$

9) $\log -m + 2 = 4$

10) $-6\log_3 (x - 3) = -24$

11) $\log_{12} (v^2 + 35) = \log_{12} (-12v - 1)$

12) $\log_9 (-11x + 2) = \log_9 (x^2 + 30)$