Pre-Calculus Name: KEY

Intro to Exponentials and Logs Practice

Write in exponential form.

1. $6 = \log_2 64$ $2^6 = 64$

2. $2 = \log_9 x$ $9^2 = x$

3. $3 = \log_b 27$ $b^3 = 27$

4. $\log_5 125 = y$ $5^y = 125$

Write in log form.

5. $5^4 = 625$ $4 = \log_5 625$

6. $5^{-3} = \frac{1}{125}$ $-3 = \log_5 \frac{1}{125}$

7. $\sqrt[3]{64} = 4$ $64^{1/3} = 4$ $\frac{1}{3} = \log_{64} 4$

8. $15^2 = x$ $2 = \log_{15} x$

9. $b^3 = 343$ $3 = \log_b 343$

10. $8^y = 300$ $y = \log_8 300$

Evaluate.

11. $\log_7 49 = 2$

12. $\log_3 27 = 3$

13. $\log_6 \sqrt{6} = \log_6 6^{1/2} = \frac{1}{2}$

14. $\log_3 \frac{1}{9} = -2$

15. $\log_{81} 9 = \frac{1}{2}$

16. $\log_{11} 11 = 1$

17. $\log_6 1 = 0$

18. $\log_4 4^6 = 6$

19. $7^{\log_7 23} = 23$

20. $\log 1000 = 3$

21. $\log 10^8 = 8$

22. $10^{\log 53} = 53$

23. $\log_6 17$ $= 1.5812$

24. $\log_{16} 57.2$ $= 1.4595$

25. $\log_{0.3} 19$ $= -2.4456$

26. $\log_x 400$ $= 5.2340$

Solve for the variable.

27. $\log_7 (x+2) = -2$

$7^{-2} = x+2$

$\frac{1}{49} = x+2$

$-2 = -2$

$\left(\frac{1}{49}\right) - 2 = x$

$-1.9796 = x$

28. $\log_5 x = 3$

$5^3 = x$

$125 = x$