

Exponentials and Logs Test Review WS #3

Write the equation in logarithmic form.

1) $3^6 = 729$

2) $8^{\frac{2}{3}} = 4$

Write the equation in exponential form.

3) $\log_5 \frac{1}{25} = -2$

4) $\log_{x+y} z = 3$

Evaluate the logarithm.

5) $\log_6 \frac{1}{216}$

6) $\log_9 729$

7) $\log 0.1$

Condense the expression as a single logarithm.

8) $4 \log_2 x - 6 \log_2 y$

9) $2 \log x + \log(x + 2)$

Expand the logarithmic expression.

10) $\log_3(12b^4)$

11) $\log_2 \left(\frac{c^3}{d} \right)$

Solve the exponential equation.

12) $\frac{1}{25} = 5^{x+2}$

13) $4^{5x-1} = 256$

Solve the logarithmic equation.

14) $\log(x + 3) - \log x = 1$

15) $3 \log_2 2 + \log_2 x = 6$

Solve for x:

16) $5^{3x-1} \cdot 5^{2x-5} = 5^{x+6}$

17) $5^{x-2} = 10^{2x+1}$

Solve the natural logarithmic equation. Round to nearest hundredth.

18) $\ln(3x + 2) = 5$

19) $\ln x - \ln 3 = 0$

Use natural logarithms to solve the equations. Round to the nearest hundredth.

20) $e^x = \frac{5}{7}$

21) $3e^{-x} + 1 = 7$

