



Topic 8: Logarithms

Questions 1 – 3 Write the given logarithmic equation in equivalent exponential form.

1. $\log_8(1) = 0$
2. $4 = \log(10,000)$
3. $\log_B(A) = N$

Questions 4 – 6 Write the given exponential equation in equivalent logarithmic form.

4. $H = e^{10}$
5. $10^5 = 100,000$
6. $7^0 = 1$

Questions 7 – 12 Determine the value of the logarithmic expression.

7. $\log_5 125 =$
8. $\log_2 \left(\frac{1}{4} \right) =$
9. $\log_9 3 =$
10. $\log_8 8 =$
11. $\log 1 =$
12. $\log_{1/4} 64 =$

Questions 13 – 16 Simplify the following expressions.

13. $10^{\log(1000)} =$
14. $3^{\log_3 81} =$
15. $e^{\ln e} =$
16. $\log(10) - \log(10^7) =$