

AA4 LOGARITHM PRACTICE TEST**C Level**

1. Rewrite $7^3 = 343$ as a logarithm.
2. Rewrite $\log_4 (1024) = 5$ as an exponent.
3. Expand $\log_7 \left(\frac{x}{y} \right)$
4. Condense $\log_4 (a) + \log_4 (b)$
5. Simplify.
 - a. $6^{\log_6(4)}$
 - b. $\log(10^x)$
 - c. $\ln(1)$
6. Solve the following equations (a-d). Round to four decimal places, if necessary. Show all your work.
 - a. $\log_2 32 = x$

b. $7^x - 2 = 66$

c. $\ln(5x) = \ln(2x + 9)$

d. $\log_8(x) + \log_8(4) = 2$

B Level

1. Simplify $e^{\ln(14)}$

2. Evaluate $49^{\log_7(3)}$

3. Evaluate $\log_5\left(\frac{1}{25}\right)$

4. Expand $\log_3(x^2y^9z^3)$

5. Solve the following equations (a-d). Round to four decimal places, if necessary. Show all your work.

a. $\ln(4x) = 3$

c. $\log_4(2) + \log_4(x - 3) = 3$

b. $-9\log_3(x - 13) + 1 = -17$

d. $5^{2x+1} = 51$

6. \$13,500 is deposited into a savings account that earns 2% interest annually. How long will it take for the account balance to reach \$16,000?

7. Graph $y = \log_7(x)$. Clearly show & label at least four coordinate points on the graph.

