

Logarithmic Functions

Date _____

Use a calculator to approximate each to the nearest thousandth.

1) $\log 20$

2) $\log 37$

3) $\ln 61$

4) $\ln 2$

5) $\log_6 8$

6) $\log 14$

Condense each expression to a single logarithm.

7) $30\log 2 - 6\log 7$

8) $\log u + \log v + 5\log w$

Expand each logarithm.

9) $\log (12 \cdot 11^3)^5$

10) $\log (a \cdot b \cdot c^2)$

Solve each equation. Round your answers to the nearest ten-thousandth.

11) $\log -3m = \log (-2m + 6)$

12) $\log (-4n - 1) = \log (2 - 3n)$

Evaluate each expression.

13) $\log_4 16$

14) $\log_6 216$

Condense each expression to a single logarithm.

15) $6\log x + 24\log y$

Rewrite each equation in exponential form.

16) $\log_{13} 13 = 1$

17) $\log_{15} 225 = 2$

Rewrite each equation in logarithmic form.

18) $12^2 = 144$

19) $13^2 = 169$