

5-2 Assignment

Rewrite each equation in exponential form.

1) $\log_9 3 = \frac{1}{2}$

2) $\log_{\frac{1}{17}} 1 = 0$

3) $\log_4 64 = 3$

4) $\log_{169} \frac{1}{13} = -\frac{1}{2}$

Rewrite each equation in logarithmic form.

5) $16^2 = 256$

6) $11^2 = 121$

7) $16^{-2} = \frac{1}{256}$

8) $19^2 = 361$

Evaluate each expression.

9) $\log_6 36$

10) $\log_3 9$

11) $\log_5 125$

12) $\log_6 216$

Use a calculator to approximate each to the nearest thousandth.

13) $\log_3 6.4$

14) $\ln 3.3$

15) $\log_7 3.6$

16) $\log 3.6$

Expand each logarithm.

17) $\log_5 (10 \cdot 11 \cdot 3^5)$

18) $\log_6 \left(\frac{2}{7^5}\right)^2$

19) $\log_5 \frac{x^5}{y^2}$

20) $\log_3 (10 \cdot 11 \cdot 7^4)$

Condense each expression to a single logarithm.

21) $6\log_3 x + 2\log_3 y$

22) $\frac{\ln u}{2} + \frac{\ln v}{2} + \frac{\ln w}{2}$

23) $3\log_3 a - 4\log_3 b$

24) $10\log_7 x + 5\log_7 y$