

## Algebra II Class Worksheet #2 Unit 11 page 1

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Complete each of the following properties of logarithms.

1.  $\text{Log}_B B = \underline{\hspace{2cm}}$

2.  $\text{Log}_B 1 = \underline{\hspace{2cm}}$

3.  $\text{Log}_B (mn) = \underline{\hspace{2cm}}$

4.  $\text{Log}_B (m^n) = \underline{\hspace{2cm}}$

5.  $\text{Log}_B \left(\frac{m}{n}\right) = \underline{\hspace{2cm}}$

6.  $\text{Log}_B \left(\frac{1}{n}\right) = \underline{\hspace{2cm}}$

Given:  $\text{Log}_N 2 = a$  ;  $\text{Log}_N 3 = b$  ;  $\text{Log}_N 5 = c$

Express each of the following using an algebraic expression in terms of a, b, and/or c.

7.  $\text{Log}_N 15 = \underline{\hspace{2cm}}$

8.  $\text{Log}_N 125 = \underline{\hspace{2cm}}$

9.  $\text{Log}_N 12 = \underline{\hspace{2cm}}$

10.  $\text{Log}_N 0.75 = \underline{\hspace{2cm}}$

11.  $\text{Log}_N (3N^3) = \underline{\hspace{2cm}}$

12.  $\text{Log}_N 0.125 = \underline{\hspace{2cm}}$

13.  $\text{Log}_N 0.6 = \underline{\hspace{2cm}}$

14.  $\text{Log}_N \sqrt{6} = \underline{\hspace{2cm}}$

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Evaluate each of the following.

15.  $\text{Log}_2 32 = \underline{\hspace{2cm}}$

16.  $\text{Log}_3 (1/9) = \underline{\hspace{2cm}}$

17.  $\text{Log}_9 3 = \underline{\hspace{2cm}}$

18.  $\text{Log}_8 0.125 = \underline{\hspace{2cm}}$

19.  $\text{Log}_2 \left(\frac{1}{16}\right) = \underline{\hspace{2cm}}$

20.  $\text{Log}_5 \sqrt{5} = \underline{\hspace{2cm}}$

Evaluate each of the following. Express irrational answers rounded to the nearest tenth.

21.  $\text{Log } 1000 = \underline{\hspace{2cm}}$

22.  $\text{Log } 0.001 = \underline{\hspace{2cm}}$

23.  $\text{Log } 60 = \underline{\hspace{2cm}}$

24.  $\text{Log } 0.3 = \underline{\hspace{2cm}}$

25.  $\ln e^3 = \underline{\hspace{2cm}}$

26.  $\ln e^{-3} = \underline{\hspace{2cm}}$

27.  $\ln 60 = \underline{\hspace{2cm}}$

28.  $\ln 0.3 = \underline{\hspace{2cm}}$

