

Algebra II Worksheet #2 Unit 11 page 1

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

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

9. $\text{Log}_N 50 = \underline{\hspace{2cm}}$

10. $\text{Log}_N 0.25 = \underline{\hspace{2cm}}$

11. $\text{Log}_N 1.5 = \underline{\hspace{2cm}}$

12. $\text{Log}_N \sqrt{5} = \underline{\hspace{2cm}}$

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

14. $\text{Log}_N (15N^2) = \underline{\hspace{2cm}}$

Algebra II Worksheet #2 Unit 11 page 2

Evaluate each of the following.

15. $\text{Log}_3 81 = \underline{\hspace{2cm}}$

16. $\text{Log}_5 0.2 = \underline{\hspace{2cm}}$

17. $\text{Log}_{16} 2 = \underline{\hspace{2cm}}$

18. $\text{Log}_2 0.125 = \underline{\hspace{2cm}}$

19. $\text{Log}_3 \left(\frac{1}{27}\right) = \underline{\hspace{2cm}}$

20. $\text{Log}_3 \sqrt{3} = \underline{\hspace{2cm}}$

Evaluate each of the following. Express irrational answers rounded to the nearest tenth.
(Calculators are needed for some of these problems.)

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

22. $\text{Log } 0.1 = \underline{\hspace{2cm}}$

23. $\text{Log } 25 = \underline{\hspace{2cm}}$

24. $\text{Log } 0.25 = \underline{\hspace{2cm}}$

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

26. $\ln e^{-1} = \underline{\hspace{2cm}}$

27. $\ln 25 = \underline{\hspace{2cm}}$

28. $\ln 0.25 = \underline{\hspace{2cm}}$

29. $\text{Log } e = \underline{\hspace{2cm}}$

30. $\ln 10 = \underline{\hspace{2cm}}$