

General Algebra 2 Worksheet #3 Unit 12 page 1 _____

Given: $\text{Log}_N 2 = a$; $\text{Log}_N 3 = b$; $\text{Log}_N 5 = c$. Express each of the following logarithms as an algebraic expression in terms of a, b, and/or c.

1. $\text{Log}_N 30 =$ _____

2. $\text{Log}_N 32 =$ _____

3. $\text{Log}_N 45 =$ _____

4. $\text{Log}_N 200 =$ _____

5. $\text{Log}_N 0.8 =$ _____

6. $\text{Log}_N 0.5 =$ _____

7. $\text{Log}_N 0.3 =$ _____

8. $\text{Log}_N 0.04 =$ _____

9. $\text{Log}_N 2.5 =$ _____

10. $\text{Log}_N 1.2 =$ _____

11. $\text{Log}_N (6N) =$ _____

12. $\text{Log}_N (2N^3) =$ _____

13. $\text{Log}_N \sqrt{3} =$ _____

14. $\text{Log}_N \sqrt{10} =$ _____

15. $\text{Log}_N \left(\frac{3}{8}\right) =$ _____

16. $\text{Log}_N \left(\frac{10}{9}\right) =$ _____

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Evaluate each of the following.

17. $\text{Log}_4 64 = \underline{\hspace{2cm}}$

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

19. $\text{Log}_5 25 = \underline{\hspace{2cm}}$

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

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

22. $\text{Log}_4 0.25 = \underline{\hspace{2cm}}$

23. $\text{Log}_8 4 = \underline{\hspace{2cm}}$

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

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

26. $\text{Log}_3 \sqrt[3]{9} = \underline{\hspace{2cm}}$