General Algebra 2 Worksheet #4 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. $\text{Log}_N 6 =$ _____

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

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

4. $\text{Log}_N 12 =$ _____

5. $\text{Log}_N 0.6 =$ _____

6. $\text{Log}_N 0.25 =$ _____

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

8. $\text{Log}_N 0.2 =$ _____

9. $\text{Log}_N 1.25 =$ _____

10. $\text{Log}_N (7.5) =$ _____

11. $\text{Log}_N (3N) =$ _____

12. $\text{Log}_N (5N^2) =$ _____

13. $\text{Log}_N \sqrt{5} =$ _____

14. $\text{Log}_N \sqrt{6} =$ _____

15. $\text{Log}_N \left(\frac{2}{9}\right) =$ _____

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

General Algebra 2 Worksheet #4 Unit 12 page 2

Evaluate each of the following.

17. $\log_2 64 =$ _____

18. $\log_5 125 =$ _____

19. $\log_3 9 =$ _____

20. $\log_{10} 10{,}000 =$ _____

21. $\log_9 3 =$ _____

22. $\log_5 0.2 =$ _____

23. $\log_9 27 =$ _____

24. $\log_5 0.04 =$ _____

25. $\log_3\left(\frac{1}{27}\right) =$ _____

26. $\log_5 \sqrt[3]{25} =$ _____