

Secondary Math III
Properties of Logarithms
Assignment 10.1

Name _____
Period _____

Evaluate the following (Round to 3 decimal places):

1. $\log_2 14$

2. $\log_3 7$

3. $\log_{20} 135$

4. $\log_9 0.8$

Simplify each expression:

5. $\log_9 9^2$

6. $7^{\log_7 12}$

7. $\ln e^{5x}$

8. $\log 10^2$

Solve for x. Simplify if possible:

9. $\log_{12} x = \log_{12} 19$

10. $\log_8 8 = x$

11. $\ln 6 = \ln x$

12. $x = \log 10$

Given $\log_a 2 \approx 0.356$, $\log_a 3 \approx 0.565$, and $\log_a 5 \approx 0.827$, use the properties of logarithms to evaluate:

13. $\log_a 8$

14. $\log_a \left(\frac{3}{5} \right)$

15. $\log_a 20$

16. $\log_a 15$

17. $\log_a \left(\frac{5}{4} \right)$

18. $\log_a 100$

Use the properties of logarithms to write the following expressions in terms of $\ln 2$ and $\ln 3$:

19. $\ln 9$

20. $\ln 8$

21. $\ln \frac{1}{6}$

22. $\ln 54$

Use the properties of logarithms to write the following expressions in terms of $\ln 3$ and $\ln 5$:

23. $\ln 15$

24. $\ln 25$

25. $\ln \frac{15}{45}$

26. $\ln 81$

ACT Practice:

27. Evaluate $\log_3 27$

A. 3

B. 10

C. 9

D. 27

E. 30