

Write the equation in exponential form.

1. $\log_2 1024 = 10$

2. $\log x = y$

3. $\log_5 25 = 2$

4. $\ln 5 = x$

Write the equation in logarithmic form.

5. $2^6 = 64$

6. $10^x = 74$

7. $5^3 = 125$

8. $e^3 = x$

Evaluate the expression without using a calculator.

9. $\log_2 128$

10. $\log_2 2^7$

11. $\ln(e^6)$

12. $\ln(e^8)$

13. $e^{2\ln 7}$

14. $\log 25 + \log 4$

15. $\log_5 250 - \log_5 2$

16. $\log_8 6 - \log_8 3 + \log_8 2$

Combine into a single logarithm

17. $\log_3 5 + 5\log_3 2$

18. $\log 12 + \frac{1}{2}\log 7 - \log 2$

19. $\log x + 2\log y - 3\log z$

Given $\log 7 = 0.845$ and $\log 6 = 0.778$ find:

20. $\log 36$

21. $\log 42$

22. $\log 252$

Evaluate.

23. $\log_3 15$

24. $\log_5 16$

25. $\log_6 92$

Solve for x.

26. $e^{3x} = 12$

27. $e^{1-4x} = 2$

28. $2e^{12x} = 17$

29. $8e^{2x} = 20$