LOGS AND LNS PRACTICE

Convert to exponential form:

1. $\log_2 32 = 5$
2. $\log \quad 7 = 0.845$
3. $\log_6 6 = 1$
4. $\log_3 81 = 4$
5. $\log_5 125 = 3$
6. $\log_a x = y$
7. $\log_r M = -x$
8. $\log_e 20.1 = 3$
9. $\ln e = 1$
10. $\ln 54.6 = 4$
11. $\ln 2 = 0.69$
12. $\ln x = y$

Convert to logarithmic form:

13. $10^2 = 100$
14. $2^4 = 16$
15. $3^2 = 9$
16. $a^x = b$
17. $b^{x+y} = a$
18. $3^{-2} = \frac{1}{9}$
19. $e^{-4} = 0.018$
20. $e^7 = t$
21. $x^6 = 4$
22. $6^x = 36$
23. $y^7 = a+b$
24. $4^{-6} = \frac{1}{4069}$

Solve for x:

25. $\log_2 x = 3$
26. $\log_2 x = 16$
27. $\log_x 4 = 1$
28. $\log_x 125 = 3$
29. $\log_7 49 = x$
30. $\log_x 64 = 2$
31. $\log_{12} 8x = 2$
32. $\log_3 9x = 4$
33. $\log x^2 = 4$
34. $\log 50x = 4$

Express as a product:

35. $\log_x B^a$
36. $\log_x y^5$
37. $\log_5 6^7$
38. $\log_2 4^x$
39. $\ln e^4$

Express as a logarithm with an exponent:

40. $x \log_a B$
41. $4 \log_5 x$
42. $2 \log_7 3$
43. $2 \ln e$

Express as 2 logarithms:

44. $\log_a(B \cdot C)$
45. $\log_2(3 \cdot 4x)$
46. $\log_5(7x \cdot 2)$
47. $\log_3(81 \cdot 27)$
48. $\log_a(y \cdot x^2)$
49. $\log_a \frac{B}{C}$
50. $\log_4 \frac{9}{7}$
51. $\log_x \frac{31}{221}$
52. $\log_7 \frac{19}{94}$
53. $\ln \frac{4x}{3}$

Simplify into a single logarithm:

54. $\log_a B + \log_a C$
55. $\log_a B - \log_a C$
56. $\log_6 12 + \log_6 10$
57. $\log_2 19 - \log_2 3$
58. $\log_{12} 1 + \log_{12} 8$
59. $\log_7 5 - \log_7 17$
60. $\ln 3 - \ln 7$
61. $\ln 2.3 + \ln 5.9$
62. $3\log_x 2 - 2\log_x 4$
63. $\frac{2}{3}\log_x 4 + \frac{1}{4}\log_x 9 - \frac{1}{2}\log_x 6$
64. $\log_x 2^y - \log_x 9^y$
65. $\log_x(y-2) - \log_x(y^2-4)$
66. $2\log_x(x-3) - \log_x(x^2+4x+3)$
67. $\log_a(2x) + 5(\log_a x - \log_a y)$