Exponential & Logarithmic Functions: Evaluating Logarithms

Evaluate each logarithm without a calculator. Find its exact value.

1. $\log_4 64$	2. $\log_6 216$	3. $\log_2 128$	4. $\log_{14} 14$
5. $\log_7 49$	6. $\ln 1$	7. $\ln e$	8. $\log 100$
9. $\log_{81} 9$	10. $\log_{32} 2$	11. $\log_{16} 4$	12. $\log_{16} 2$
13. $\log_{32} \frac{1}{2}$	14. $\log_{64} \frac{1}{8}$	15. $\log_{\frac{1}{4}} 128$	16. $\log_8 2$
17. $\log_{\frac{1}{8}} 2$	18. $\log_2 \frac{1}{8}$	19. $\log_{\frac{1}{2}} \frac{1}{8}$	20. $\log_{\frac{1}{8}} \frac{1}{2}$