

Write each expression as a single natural logarithm.

1. $3 \ln 5$

2. $\ln 9 + \ln 2$

3. $\ln 24 - \ln 6$

4. $4 \ln 8 + \ln 10$

5. $\ln 3 - 5 \ln 3$

6. $2 \ln 8 - 3 \ln 4$

7. $5 \ln m - 3 \ln n$

8. $3 \ln x + \ln y - 4 \ln z$

9. $\ln a - 2 \ln b + \ln c$

Write each expression as a single natural logarithm.

10. $\ln 16 - \ln 8$

11. $3 \ln 3 + \ln 9$

12. $a \ln 4 - \ln b$

13. $\ln z - 3 \ln x$

14. $-\ln 9 + \ln 3x$

15. $4 \ln x + 3 \ln y$