

Evaluate each of the following integrals:

1. $\int_0^1 \ln^4 \frac{1}{\cosh x - \sinh x} dx$ (give an exact value only)

2. $\int_{\ln 2}^{\ln 3} e^x \ln \frac{e^x - 1}{e^x + 1} dx$

3. $\int (4x^5 + 4x^3 + x) e^{\sqrt{2x^2+1}} dx$