

Calculus I-01
Natural Logarithm Workshop

Determine the derivative, with respect to x , of each of the following:

1. $\ln(e^{-x} + x^2)$

2. $e^{-x^2}(\sin(2x) + \ln x)$

3. $\frac{e^{-2x}}{\ln(x^2 + 3x + 1)}$

4. $\ln(\ln(\ln(x)))$

Determine each the following indefinite integrals:

5. $\int \frac{\sin(\ln x)}{x} dx$

6. $\int \frac{3}{x \ln x} dx$

7. $\int \frac{1}{3x - 7} dx$

8. $\int \cot(x) dx$

Confirm each of your answers to #5 - 8 by differentiating.