

Evaluate the following integrals.

1.  $\int x \ln(x) dx$

2.  $\int_1^{e^3} \ln(x) dx$

3.  $\int \frac{e^x}{1 + e^{2x}} dx$

4.  $\int x^3 \cos(x^4) dx$

5.  $\int x^2 \sin(x^3) dx$

6.  $\int \arctan(x) dx$

7.  $\int_2^3 \frac{x^2 - 1}{x^3 - 3x} dx$

8.  $\int e^x \sin(e^x) dx$