



Problem Set 33: Exponential and Logarithmic Integrals

Evaluate the integrals of the exponential functions.

1. $\int e^{5x} dx$

2. $\int 3e^{x/3} dx$

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

4. $\int xe^{x^2} dx$

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5. $\int -2 \sin x \cdot e^{\cos x} dx$

6. $\int \frac{e^{x+1}}{e^{-x}-1} dx$

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7. $\int_2^4 \frac{e^{7x}}{e} dx$

8. $\int_0^1 e^{x^2-2x} \cdot (4x - 4) dx$

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Evaluate the following integrals using integration with logarithms.

9. $\int \frac{1}{4x} dx$

10. $\int \frac{dx}{x+2}$

11. $\int \frac{6x}{3x^2 - 2} dx$

12. $\int -\frac{\sec^2 x}{\tan x} dx$

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13. $\int \frac{\ln x}{x} dx$

14. $\int \frac{1}{x \ln x} dx$

15. $\int_1^2 \frac{-x^2 - 1}{2x} dx$