

Use the pattern $\int e^u du = e^u + C$ to integrate each of the following.

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

2. $\int e^{5x} dx =$

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

4. $\int e^{\sin x} \cos x dx =$

Integrate and evaluate each of the following. (Please give the exact value in simplest form.)

5. $\int_0^1 e^x dx =$

6. $\int_2^3 e^x dx =$

7. $\int_1^2 e^{2x} dx =$

8. $\int_0^4 e^{0.5x} dx =$

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Use the pattern $\int \frac{du}{u} = \ln |u| + C$ to integrate each of the following.

$$9. \int \frac{dx}{2x+3} =$$

$$10. \int \frac{dx}{3x-1} =$$

$$11. \int \frac{x \, dx}{x^2+4} =$$

$$12. \int \frac{x^2 dx}{x^3-1} =$$

Integrate and evaluate each of the following. (Please give the exact value in simplest form.)

$$13. \int_1^3 \frac{dx}{x} =$$

$$14. \int_2^5 \frac{dx}{x} =$$

$$15. \int_0^2 \frac{dx}{3x+2} =$$

$$16. \int_1^3 \frac{x \, dx}{x^2+3} =$$