

The variable for antidifferentiation is x . C is an arbitrary constant.

0. The antiderivative of one is $x + C$. $\int dx = x + C$.

1. Power rules

The antiderivative of x^p is $x^p / (p + 1) + C$ for a constant $p \neq -1$.

The antiderivative of x^{-1} is $\ln(x) + C$.

$$\int x^p dx = x^p / (p + 1) + C \text{ for a constant } p \neq -1$$

$$\int x^{-1} dx = \ln(x) + C$$

2. Sum rule

$$\int (f(x) + g(x)) dx = \int f(x) dx + \int g(x) dx$$

3. Difference rule

$$\int (f(x) - g(x)) dx = \int f(x) dx - \int g(x) dx$$

4. Constant rule

$$\int b f(x) dx = b \int f(x) dx \text{ for a constant } b$$

5. e rule

$$\int e^x dx = e^x + C$$

6. Trig rules

$$\int \sin(x) dx = -\cos(x) + C$$

$$\int \cos(x) dx = \sin(x) + C$$

$$\int (dx / (\cos(x))^2) = \tan(x) + C$$

7. Inverse trig rules

$$\int dx / (1 - x^2)^{1/2} = \arcsin(x) + C$$

$$\int dx / (1 + x^2) = \arctan(x) + C$$