

Integrálalási szabályok, összefüggések

Integrálási módszerek és szabályok:

- $\int c \cdot f(x) dx = c \cdot \int f(x) dx$
- $\int (f(x) \pm g(x)) dx = \int f(x) dx \pm \int g(x) dx$
- $\int (f(x) \cdot g'(x) dx = f(x) \cdot g(x) - \int f'(x) \cdot g(x) dx$
- $\int f(ax + b) dx = \frac{F(ax + b)}{a} + C$
- $\int f^\alpha(x) \cdot f'(x) dx = \frac{f^{\alpha+1}(x)}{\alpha + 1} + C, (\alpha \in \mathbb{R})$
- $\int \frac{f'(x)}{f(x)} dx = \ln(|f(x)|) + C$

Alapintegrálok:

$\int c dx = cx + C$
$\int x^\alpha dx = \frac{x^{\alpha+1}}{\alpha+1} + C, (\alpha \in \mathbb{R})$
$\int \frac{1}{x} dx = \ln x + C$
$\int \sin(x) dx = -\cos(x) + C$
$\int \cos(x) dx = \sin(x) + C$
$\int e^x dx = e^x + C$
$\int a^x dx = \frac{a^x}{\ln(a)} + C, (a \in \mathbb{R}^+, a \neq 1)$
$\int \frac{1}{\cos^2(x)} dx = \operatorname{tg}(x) + C$
$\int \frac{1}{\sin^2(x)} dx = -\operatorname{ctg}(x) + C$
$\int \ln(x) dx = x \ln(x) - x$