

Tabulkové integrály

$$\int a \, dx = ax + c \quad a \in \mathbb{R}, x \in \mathbb{R}$$

$$\int x^n \, dx = \frac{x^{n+1}}{n+1} + c \quad n \in \mathbb{N}, x \in \mathbb{R}$$

$$\int x^\alpha \, dx = \frac{x^{\alpha+1}}{\alpha+1} + c \quad \alpha \in \mathbb{R} \setminus \{-1\}, x \in \mathbb{R}^+$$

$$\int \frac{1}{x} \, dx = \ln|x| + c \quad x \in \mathbb{R} \setminus \{0\}$$

$$\int e^x \, dx = e^x + c \quad x \in \mathbb{R}$$

$$\int a^x \, dx = \frac{a^x}{\ln a} + c \quad a \in \mathbb{R}^+ \setminus \{1\}, x \in \mathbb{R}$$

$$\int \sin x \, dx = -\cos x + c \quad x \in \mathbb{R}$$

$$\int \cos x \, dx = \sin x + c \quad x \in \mathbb{R}$$

$$\int \frac{1}{\cos^2 x} \, dx = \operatorname{tg} x + c \quad x \in \mathbb{R} \setminus \{\frac{\pi}{2} + k\pi, k \in \mathbb{Z}\}$$

$$\int \frac{1}{\sin^2 x} \, dx = -\operatorname{cotg} x + c \quad x \in \mathbb{R} \setminus \{k\pi, k \in \mathbb{Z}\}$$

$$\int \frac{1}{1+x^2} \, dx = \operatorname{arctg} x + c \quad x \in \mathbb{R}$$

$$\int \frac{1}{\sqrt{1-x^2}} \, dx = \operatorname{arcsin} x + c \quad x \in (-1, 1)$$

$$\int \frac{f'(x)}{f(x)} \, dx = \ln|f(x)| + c \quad f(x) \neq 0$$

$$\int f(ax+b) \, dx = \frac{1}{a} F(ax+b) + c \quad a \in \mathbb{R} \setminus \{0\}, b \in \mathbb{R}, F \dots \text{prim. f. k } f$$

Vzorce pro integrování součtu a rozdílu funkcí

$$\int (f(x) \pm g(x)) \, dx = \int f(x) \, dx \pm \int g(x) \, dx,$$
$$\int a f(x) \, dx = a \int f(x) \, dx.$$

Metoda per partes

$$\int u(x) \cdot v'(x) \, dx = u(x) \cdot v(x) - \int u'(x) \cdot v(x) \, dx.$$

Substituční metoda

$$\int f(\varphi(x)) \cdot \varphi'(x) \, dx = \int f(t) \, dt, \text{ kde } t = \varphi(x).$$

Newton–Leibnizův vzorec pro určité integrály

$$\int_a^b f(x) \, dx = F(b) - F(a), \text{ kde } F \text{ je prim. funkce k } f.$$