

Integrály vybraných elementárních funkcí

1. $\int 0 \, dx = C$
2. $\int k \, dx = kx + C$, $k \in \mathbb{R}$, konstanta
3. $\int x^n \, dx = \frac{x^{n+1}}{n+1} + C$, $n \in \mathbb{R}$, $n \neq -1$
4. $\int \frac{1}{x} \, dx = \ln|x| + C$, $x \neq 0$
5. $\int a^x \, dx = \frac{a^x}{\ln a} + C$, $a > 0$, $a \neq 1$ speciálně $\int e^x \, dx = e^x + C$
6. $\int \cos x \, dx = \sin x + C$
7. $\int \sin x \, dx = -\cos x + C$
8. $\int \frac{1}{\cos^2 x} \, dx = \operatorname{tg} x + C$, $x \neq (2k+1)\frac{\pi}{2}$, $k \in \mathbb{Z}$
9. $\int \frac{1}{\sin^2 x} \, dx = -\operatorname{cotg} x + C$, $x \neq k\pi$, $k \in \mathbb{Z}$
10. $\int \frac{1}{\sqrt{1-x^2}} \, dx = \arcsin x + C$, (resp. $-\arccos x + C$), $x \in (-1, 1)$
11. $\int \frac{1}{1+x^2} \, dx = \operatorname{arctg} x + C$, (resp. $-\operatorname{arccotg} x + C$)
12. $\int \frac{1}{\sqrt{x^2+a}} \, dx = [\ln(x + \sqrt{a+x^2})] + C$, $a \neq 0$
13. $\int \frac{f'(x)}{f(x)} \, dx = \ln|f(x)| + C$, $f(x) \neq 0$.

Tab. 10.1