

NEPOSREDNO INTEGRIRANJE:

Osnovna svojstva neodređenog interala:

1. $d\left(\int f(x)dx\right) = f(x)dx \Leftrightarrow \left(\int f(x)dx\right)' = f(x)$
2. $\int dF(x) = F(x) + C \Leftrightarrow \int F'(x)dx = F(x) + C$
3. $\int (\lambda f(x) + \mu g(x))dx = \lambda \int f(x)dx + \mu \int g(x)dx$
4. $\int f(\varphi(x))\varphi'(x)dx = \int f(\varphi(x))d\varphi(x) = \int f(t)dt = F(t) + C = F(\varphi(x)) + C$
gdje je F primitivna funkcija funkcije f tj. $F' = f$.

Tablični integrali:

1. $\int dx = x + C$
2. $\int x^\alpha dx = \frac{1}{\alpha + 1}x^{\alpha+1} + C, \alpha \neq -1$
3. $\int \frac{dx}{x} = \ln|x| + C$
4. $\int \frac{dx}{a^2 + x^2} = \frac{1}{a} \operatorname{arctg} \frac{x}{a} + C, a \neq 0$
5. $\int \frac{dx}{\sqrt{a^2 - x^2}} = \arcsin \frac{x}{a} + C, a \neq 0$
6. $\int \frac{dx}{\sqrt{a^2 + x^2}} = \ln\left(x + \sqrt{x^2 + a^2}\right) + C, a \neq 0$
7. $\int \frac{dx}{\sqrt{x^2 - a^2}} = \ln\left|x + \sqrt{x^2 - a^2}\right| + C, a \neq 0$
8. $\int a^x dx = \frac{a^x}{\ln a} + C$
9. $\int \sin x dx = -\cos x + C$
10. $\int \cos x dx = \sin x + C$
11. $\int \frac{dx}{\cos^2 x} = \operatorname{tg} x + C$
12. $\int \frac{dx}{\sin^2 x} = -\operatorname{ctg} x + C$