

<i>Tablica izvoda:</i>	
<i>Funkcija $f(x)$</i>	<i>Izvod $f'(x)$</i>
$c = const$	0
x	1
x^α	$\alpha x^{\alpha-1}$
a^x	$a^x \ln a$
e^x	e^x
$\log_a x$	$\frac{1}{x \ln a}$
$\ln x $	$\frac{1}{x}$
$\sin x$	$\cos x$
$\cos x$	$-\sin x$
tgx	$\frac{1}{\cos^2 x}$
$ctgx$	$-\frac{1}{\sin^2 x}$
$\arcsin x$	$\frac{1}{\sqrt{1-x^2}}$
$\arccos x$	$-\frac{1}{\sqrt{1-x^2}}$
$arctgx$	$\frac{1}{1+x^2}$
$arcctgx$	$-\frac{1}{1+x^2}$

<i>Tablica integrala:</i>
$\int dx = x + c$
$\int x^n dx = \frac{x^{n+1}}{n+1} + c$
$\int \frac{dx}{x} = \ln x + c$
$\int e^x dx = e^x + c$
$\int a^x dx = \frac{a^x}{\ln a} + c$
$\int \sin x dx = -\cos x + c$
$\int \cos x dx = \sin x + c$
$\int \frac{dx}{\cos^2 x} = tgx + c$
$\int \frac{dx}{\sin^2 x} = -ctgx + c$
$\int \frac{dx}{x^2 + a^2} = \frac{1}{a} \arctg \frac{x}{a} + c = -\frac{1}{a} \text{arcctg} \frac{x}{a} + c_1, a \neq 0$
$\int \frac{dx}{x^2 - a^2} = \frac{1}{2a} \ln \left \frac{x-a}{x+a} \right + c, a \neq 0$
$\int \frac{dx}{\sqrt{x^2 \pm a^2}} = \ln \left x + \sqrt{x^2 \pm a^2} \right + c, a \neq 0$
$\int \frac{dx}{\sqrt{a^2 - x^2}} = \arcsin \frac{x}{a} + c = -\arccos \frac{x}{a} + c_1, a > 0$
$\int \frac{dx}{\sin x} = \ln \left tg \frac{x}{2} \right + c$
$\int \frac{dx}{\cos x} = \ln \left tg \left(\frac{x}{2} + \frac{\pi}{4} \right) \right + c$
$\int \sqrt{a^2 - x^2} dx = \frac{x}{2} \sqrt{a^2 - x^2} + \frac{a^2}{2} \arcsin \frac{x}{a} + c, a > 0$
$\int \sqrt{x^2 + A} dx = \frac{x}{2} \sqrt{x^2 + A} + \frac{A}{2} \ln \left x + \sqrt{x^2 + A} \right + c$

Površine ravnih figura:

$$P = \int_a^b |f(x)| dx, \quad P = \int_{t_1}^{t_2} y(t) \cdot x'_t(t) dt, \quad P = \frac{1}{2} \int_\alpha^\beta \rho^2(\varphi) d\varphi.$$

Dužina luka krive: $l = \int_a^b \sqrt{1 + (f'(x))^2} dx, \quad l = \int_{t_1}^{t_2} \sqrt{(x'_t(t))^2 + (y'_t(t))^2} dt, \quad l = \int_\alpha^\beta \sqrt{\rho^2(\varphi) + (\rho'(\varphi))^2} d\varphi.$

Zapremina obrtnih tela: $V = \pi \int_a^b f^2(x) dx, \quad V = \pi \int_{t_1}^{t_2} y^2(t) \cdot x'_t(t) dt, \quad V = \frac{2\pi}{3} \int_\alpha^\beta \rho^3(\varphi) \sin \varphi d\varphi.$

Površina omotača obrtnih tela:

$$P = 2\pi \int_a^b |f(x)| \sqrt{1 + (f'(x))^2} dx, \quad P = 2\pi \int_{t_1}^{t_2} |y(t)| \sqrt{(x'_t(t))^2 + (y'_t(t))^2} dt, \quad P = 2\pi \int_\alpha^\beta \rho(\varphi) \sqrt{\rho^2(\varphi) + (\rho'(\varphi))^2} \sin \varphi d\varphi.$$

Maklorenove formule:

$$e^x = 1 + \frac{x}{1!} + \frac{x^2}{2!} + \dots + \frac{x^{n-1}}{(n-1)!} + R_n(x), \quad R_n(x) = \frac{x^n}{n!} e^{\theta x}, \quad 0 < \theta < 1, x \in \mathbb{R}.$$

$$\sin x = \frac{x}{1!} - \frac{x^3}{3!} + \frac{x^5}{5!} - \dots + (-1)^{n-1} \frac{x^{2n-1}}{(2n-1)!} + R_{2n+1}(x), \quad R_{2n+1}(x) = (-1)^n \frac{x^{2n+1}}{(2n+1)!} \cos \theta x, \quad 0 < \theta < 1, x \in \mathbb{R}.$$

$$\cos x = 1 - \frac{x^2}{2!} + \frac{x^4}{4!} - \dots + (-1)^{n-1} \frac{x^{2n-2}}{(2n-2)!} + R_{2n}(x), \quad R_{2n}(x) = (-1)^n \frac{x^{2n}}{(2n)!} \cos \theta x, \quad 0 < \theta < 1, x \in \mathbb{R}.$$

$$\ln(1+x) = \frac{x}{1} - \frac{x^2}{2} + \frac{x^3}{3} - \frac{x^4}{4} + \dots + (-1)^n \frac{x^{n-1}}{(n-1)} + R_n(x), \quad R_n(x) = (-1)^{n+1} \frac{x^n}{n(1+\theta x)^n}, \quad 0 < \theta < 1, -1 < x \leq 1, n > 1.$$

$$(1+x)^\alpha = \binom{\alpha}{0} + \binom{\alpha}{1}x + \binom{\alpha}{2}x^2 + \dots + \binom{\alpha}{n-1}x^{n-1} + R_n(x), \quad R_n(x) = \binom{\alpha}{n}x^n(1+\theta x)^{\alpha-n}, \quad 0 < \theta < 1, |x| < 1,$$

$$\binom{\alpha}{k} = \frac{\alpha(\alpha-1)\dots(\alpha-k+1)}{k!}, \quad \alpha \in \mathbb{R}, k \in \mathbb{N}_0 = \mathbb{N} \cup \{0\};$$

$$\alpha = 1: \quad \frac{1}{1+x} = \sum_{k=0}^{n-1} (-1)^k x^k + R_n(x) \quad R_n(x) = \frac{(-1)^n x^n}{(1+\theta x)^{n+1}}, \quad 0 < \theta < 1, |x| < 1.$$

Trigonometrija:

$$\sin(x+y) = \sin x \cos y + \cos x \sin y$$

$$\cos(x+y) = \cos x \cos y - \sin x \sin y$$

$$\operatorname{tg}(x+y) = \frac{\operatorname{tg}x + \operatorname{tg}y}{1 - \operatorname{tg}x \cdot \operatorname{tg}y}$$

$$\operatorname{ctg}(x+y) = \frac{\operatorname{ctg}x \operatorname{ctg}y - 1}{\operatorname{ctg}x + \operatorname{ctg}y}$$

$$\sin(x-y) = \sin x \cos y - \cos x \sin y$$

$$\cos(x-y) = \cos x \cos y + \sin x \sin y$$

$$\operatorname{tg}(x-y) = \frac{\operatorname{tg}x - \operatorname{tg}y}{1 + \operatorname{tg}x \cdot \operatorname{tg}y}$$

$$\operatorname{ctg}(x-y) = \frac{\operatorname{ctg}x \operatorname{ctg}y + 1}{\operatorname{ctg}y - \operatorname{ctg}x}$$

$$\sin x + \sin y = 2 \sin \frac{x+y}{2} \cos \frac{x-y}{2}$$

$$\cos x + \cos y = 2 \cos \frac{x+y}{2} \cos \frac{x-y}{2}$$

$$\operatorname{tg}x + \operatorname{tg}y = \frac{\sin(x+y)}{\cos x \cos y}$$

$$\operatorname{ctg}x + \operatorname{ctg}y = \frac{\sin(x+y)}{\sin x \sin y}$$

$$\sin x - \sin y = 2 \sin \frac{x-y}{2} \cos \frac{x+y}{2}$$

$$\cos x - \cos y = -2 \sin \frac{x+y}{2} \sin \frac{x-y}{2}$$

$$\operatorname{tg}x - \operatorname{tg}y = \frac{\sin(x-y)}{\cos x \cos y}$$

$$\operatorname{ctg}x - \operatorname{ctg}y = \frac{\sin(y-x)}{\sin x \sin y}$$

$$\sin 2x = 2 \sin x \cos x$$

$$\cos 2x = \cos^2 x - \sin^2 x$$

$$\operatorname{tg} 2x = \frac{2 \operatorname{tg}x}{1 - \operatorname{tg}^2 x}$$

$$\operatorname{ctg} 2x = \frac{\operatorname{ctg}^2 x - 1}{2 \operatorname{ctg}x}$$

$$\sin x \cos y = \frac{1}{2} [\sin(x-y) + \sin(x+y)]$$

$$\sin x \sin y = \frac{1}{2} [\cos(x-y) - \cos(x+y)]$$

$$\cos x \cos y = \frac{1}{2} [\cos(x-y) + \cos(x+y)]$$

$$\sin^2 \frac{x}{2} = \frac{1 - \cos x}{2}$$

$$\cos^2 \frac{x}{2} = \frac{1 + \cos x}{2}$$

$$\sin x = \frac{2 \operatorname{tg} \frac{x}{2}}{1 + \operatorname{tg}^2 \frac{x}{2}}$$

$$\cos x = \frac{1 - \operatorname{tg}^2 \frac{x}{2}}{1 + \operatorname{tg}^2 \frac{x}{2}}$$

$$\sin^2 x = \frac{\operatorname{tg}^2 x}{1 + \operatorname{tg}^2 x}$$

$$\cos^2 x = \frac{1}{1 + \operatorname{tg}^2 x}$$