Таблици

Основни производни	Основни неопределени интеграли
$(C)' = 0, \quad C = const$	$\int x^\alpha \, dx = \frac{x^{\alpha+1}}{\alpha+1} + C, \quad \alpha \neq -1$
$(u^\alpha)' = \alpha u^{\alpha-1} \, . \, u'$	$\int \frac{dx}{x} = \ln\lvert x\rvert + C$
$(a^u)' = a^u \ln a \, . \, u'$	$\int a^x \, dx = \frac{a^x}{\ln a} + C$
$(e^u)' = e^u \, . \, u'$	$\int e^x \, dx = e^x + C$
$(\log_a u)' = \frac{1}{u \ln a} \, . \, u'$	$\int \sin x \, dx = -\cos x + C$
$(\ln u)' = \frac{1}{u} \, . \, u'$	$\int \cos x \, dx = \sin x + C$
$(\sin u)' = \cos u \, . \, u'$	$\int \frac{dx}{\cos^2 x} = \mathrm{tg}\, x + C$
$(\cos u)' = -\sin u \, . \, u'$	$\int \frac{dx}{\sin^2 x} = -\mathrm{ctg}\, x + C$
$(\mathrm{tg}\, u)' = \frac{1}{\cos^2 u} \, . \, u'$	$\int \frac{dx}{\sqrt{1-x^2}} = \arcsin x + C$
$(\mathrm{ctg}\, u)' = -\frac{1}{\sin^2 u} \, . \, u'$	$\int \frac{dx}{\sqrt{a^2-x^2}} = \arcsin \frac{x}{a} + C$
$(\arcsin u)' = \frac{1}{\sqrt{1-u^2}} \, . \, u'$	$\int \frac{dx}{x^2+1} = \mathrm{arctg}\, x + C$
$(\arccos u)' = -\frac{1}{\sqrt{1-u^2}} \, . \, u'$	$\int \frac{dx}{x^2+a^2} = \frac{1}{a} \mathrm{arctg} \frac{x}{a} + C$
$(\mathrm{arctg}\, u)' = \frac{1}{1+u^2} \, . \, u'$	$\int \frac{dx}{\sqrt{x^2 \pm a^2}} = \ln\lvert x + \sqrt{x^2 \pm a^2}\rvert + C$
$(\mathrm{arcctg}\, u)' = -\frac{1}{1+u^2} \, . \, u'$	$\int \frac{dx}{x^2-a^2} = \frac{1}{2a} \ln \left\lvert \frac{x-a}{x+a} \right\rvert + C$

$$(f+g)' = f' + g', \quad (f-g)' = f' - g', \quad (fg)' = f'g + fg', \quad \left(\tfrac{f}{g}\right)' = \tfrac{f'g - fg'}{g^2}, \quad (f(u))' = f'(u).u'$$

$$(f+C)' = f', \quad (Cf)' = Cf'$$

Тригонометрични функции

α	0	$\frac{\pi}{6}$	$\frac{\pi}{4}$	$\frac{\pi}{3}$	$\frac{\pi}{2}$	$\frac{2\pi}{3}$	$\frac{3\pi}{4}$	$\frac{5\pi}{6}$	π
$\sin\alpha$	0	$\frac{1}{2}$	$\frac{\sqrt{2}}{2}$	$\frac{\sqrt{3}}{2}$	1	$\frac{\sqrt{3}}{2}$	$\frac{\sqrt{2}}{2}$	$\frac{1}{2}$	0
$\cos\alpha$	1	$\frac{\sqrt{3}}{2}$	$\frac{\sqrt{2}}{2}$	$\frac{1}{2}$	0	$-\frac{1}{2}$	$-\frac{\sqrt{2}}{2}$	$-\frac{\sqrt{3}}{2}$	-1
$\mathrm{tg}\,\alpha$	0	$\frac{1}{\sqrt{3}}$	1	$\sqrt{3}$	$+\infty$	$-\sqrt{3}$	-1	$-\frac{1}{\sqrt{3}}$	0
$\mathrm{ctg}\,\alpha$	$+\infty$	$\sqrt{3}$	1	$\frac{1}{\sqrt{3}}$	0	$-\frac{1}{\sqrt{3}}$	-1	$-\sqrt{3}$	$-\infty$

$$\sin 2\alpha = 2\sin\alpha\cos\alpha, \qquad \cos 2\alpha = \cos^2\alpha - \sin^2\alpha = 2\cos^2\alpha - 1 = 1 - 2\sin^2\alpha$$

Степени и логаритми

$$a^m a^n = a^{m+n}, \qquad \frac{a^m}{a^n} = a^{m-n}, \qquad a^{-m} = \frac{1}{a^m}, \qquad \sqrt[n]{a^m} = a^{\frac{m}{n}}$$

$$\ln a^n = n\ln a, \qquad \ln(ab) = \ln a + \ln b, \qquad \ln\tfrac{a}{b} = \ln a - \ln b, \qquad a = e^{\ln a}$$

Формули за съкратено умножение

$$(x \pm y)^2 = x^2 \pm 2xy + y^2, \qquad x^2 - y^2 = (x-y)(x+y)$$

$$(x \pm y)^3 = x^3 \pm 3x^2y + 3xy^2 \pm y^3, \qquad x^3 \pm y^3 = (x \pm y)(x^2 \mp xy + y^2)$$

Разлагане на квадратен тричлен

$$ax^2 + bx + c = a(x - x_1)(x - x_2), \quad \text{където } x_{1,2} = \frac{-b \pm \sqrt{b^2 - 4ac}}{2a}$$