$\lim\limits_{x \to 0} \frac{1}{x} = +\infty$, ако $x > 0$

$\lim\limits_{x \to 0} \frac{1}{x} = -\infty$, ако $x < 0$

$\lim\limits_{x \to \pm\infty} \frac{1}{x} = 0$ $\quad$ $\lim\limits_{x \to \infty} \frac{1}{2^x} = 0$

$\lim\limits_{x \to \infty} \left(-\frac{1}{10}\right)^x = 0$

$\lim\limits_{x \to 0} \frac{\sin x}{x} = 1$

$\lim\limits_{x \to \pm\infty} \left(1 + \frac{f}{x}\right)^x = e^x$

$\lim\limits_{a \to 0} \left(1 + (1+a)^{\frac{1}{a}}\right) = e$

$\lim\limits_{x \to 0} \frac{\ln(1+x)}{x} = \lim \frac{\ln y}{y-1} = 1$

$\lim\limits_{x \to 0} \frac{e^x - 1}{x} = 1$

$\lim\limits_{x \to \infty} \frac{a^x - 1}{x} = \ln a$

$\lim\limits_{x \to 0} \frac{(1+x)^a - 1}{x} = a$

$\lim\limits_{x \to 0} \frac{1 - \cos ax}{x^2} = \frac{a^2}{2}$

$\lim\limits_{x \to \pm\infty} \left(1 + \frac{1}{x}\right)^x = e$

$(x)' = 1$ $\quad$ $(c)' = 0$

$(\sqrt{x})' = \frac{1}{2\sqrt{x}}$ $\quad$ $(x^a)' = a x^{a-1}$

$(e^x)' = e^x$ $\quad$ $(a^x)' = a^x \ln a$

$(\ln(x))' = \frac{1}{x}$ $\quad$ $(\log_a x)' = \frac{1}{x \ln a}$

$(\sin x)' = \cos x$

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

$(\operatorname{tg} x)' = \frac{1}{\cos^2 x}$ $\quad$ $(\operatorname{cotg} x)' = -\frac{1}{\sin^2 x}$

$(\arcsin x)' = \frac{1}{\sqrt{1-x^2}}$

$(\arccos x)' = -\frac{1}{\sqrt{1-x^2}}$

$(\operatorname{arctg} x)' = \frac{1}{1+x^2}$

$(\operatorname{arccotg} x)' = -\frac{1}{1+x^2}$

$(c \cdot u)' = c \cdot u'$

$(u + v - w)' = u' + v' - w'$

$(u \cdot v)' = u'v + u \cdot v'$

$\left(\frac{u}{v}\right)' = \frac{u'v - u \cdot v'}{v^2}$

$\left(\frac{c}{v}\right)' = \frac{c \cdot v'}{v^2}$

$\left(\frac{u}{c}\right)' = \frac{u'}{c}$

$$(u^a)' = a \cdot u^{a-1} \cdot u'$$

$$(\sqrt{u})' = \frac{1}{2\sqrt{u}} \cdot u'$$

$$(a^u)' = a^u \cdot \ln a \cdot u'$$

$$(e^u)' = e^u \cdot u'$$

$$(\log_a u)' = \frac{1}{u \cdot \ln a} \cdot u'$$

$$(\ln u)' = \frac{1}{u} \cdot u'$$

$$(\sin u)' = \cos u \cdot u'$$

$$(\cos u)' = -\sin u \cdot u'$$

$$(\operatorname{tg} u)' = \frac{1}{\cos^2 u} \cdot u'$$

$$(\operatorname{cotg} u)' = -\frac{1}{\sin^2 u} \cdot u'$$

$$(\arcsin u)' = \frac{1}{\sqrt{1-u^2}} \, u'$$

$$(\arccos u)' = -\frac{1}{\sqrt{1-u^2}} \cdot u'$$

$$(\operatorname{arctg} u)' = \frac{1}{1+u^2} \cdot u'$$

$$(\operatorname{arccotg} u)' = -\frac{1}{1+u^2} \cdot u'$$

$$dy = f'(x)dx$$

Производни	Диференциал на функция
$(u^a)' = a.u^{a-1}.u'$	$d(x^a) = a.x^{a-1}.dx$
$(\sqrt{u})' = \frac{1}{2\sqrt{u}}.u'$	$d(\sqrt{x}) = \frac{1}{2\sqrt{x}}dx$
$(a^u)' = a^u \ln a.u'$	$d(a^x) = a^x \ln a\, dx$
$(e^u)' = e^u.u'$	$d(e^x) = e^x dx$
$(\log_a u)' = \frac{u'}{u \ln a}$	$d(\log_a x) = \frac{dx}{x.\ln a}$
$(\ln u)' = \frac{u'}{u}$	$d(\ln x) = \frac{dx}{x}$
$(\sin u)' = \cos u.u'$	$d(\sin x) = \cos x\, dx$
$(\cos u)' = -\sin u.u'$	$d(\cos x) = -\sin x\, dx$
$(tg u)' = \frac{1}{\cos^2 u} u'$	$d(tg x) = \frac{dx}{\cos^2 x}$
$(cotg u)' = -\frac{1}{\sin^2 u} u'$	$d(cotg x^2) = -\frac{dx}{\sin^2 x}$
$(\arcsin u)' = \frac{1}{\sqrt{1-u^2}} u'$	$d(\arcsin x) = \frac{dx}{\sqrt{1-x^2}}$
$(\arccos u)' = \frac{1}{\sqrt{1-u^2}} u'$	$d(\arccos x) = -\frac{dx}{\sqrt{1-x^2}}$
$(arctg u)' = \frac{1}{x^2+1} u'$	$d(arctg x) = \frac{dx}{1+x^2}$
$(arccotg u)' = -\frac{1}{x^2+1} u'$	$d(arccotg x) = -\frac{dx}{1+x^2}$
	$d(u+v-w) = du+dv-dw$
	$d(c.u) = c\,du$
	$d(u.v) = u.dv+v.du$
	$d\left(\frac{u}{v}\right) = \frac{v.du-u.dv}{v^2}$

Интеграл на функция

$$\int 0\,dx = C$$

$$\int 1\cdot dx = x + C$$

$$\int x^a\,dx = \frac{x^{a+1}}{a+1} + C,\quad a \neq -1$$

$$\int \frac{dx}{x} = \ln|x| + C$$

$$\int a^x\,dx = \frac{a^x}{\ln a} + C,\quad a>0,\ a\neq 1$$

$$\int e^x\,dx = e^x + C$$

$$\int \cos x\,dx = \sin x + C$$

$$\int \sin x\,dx = -\cos x + C$$

$$\int \frac{dx}{\cos^2 x} = \operatorname{tg} x + C$$

$$\int \frac{dx}{\sin^2 x} = -\operatorname{cotg} x + C$$

$$\int \frac{dx}{\sqrt{1-x^2}} = \arcsin x + C$$

$$\int \frac{dx}{\sqrt{a^2-x^2}} = \arcsin \frac{x}{2} + C$$

$$\int \frac{dx}{1+x^2} = \operatorname{arctg} x + C$$

$$\int \frac{dx}{a^2+x^2} = \frac{1}{a}\operatorname{arctg}\frac{x}{a} + C$$

$$\int \frac{dx}{\sin x} = \ln\left|\operatorname{tg}\frac{x}{2}\right| + C$$

$$\int \frac{dx}{\cos x} = \ln\left|\operatorname{tg}\left(\frac{\pi}{4}+\frac{x}{2}\right)\right| + C$$

$$\int \frac{dx}{x^2-a^2} = \frac{1}{2a}\ln\left|\frac{x-a}{x+a}\right| + C$$

$$\int \frac{dx}{\sqrt{x^2\pm a^2}} = \ln\left|x+\sqrt{x^2\pm a^2}\right| + C$$

$$\int \sqrt{a^2-x^2}\,dx = \frac{x}{2}\sqrt{a^2-x^2} + \frac{a^2}{2}\arcsin\frac{x}{a} + C$$

$$\int \sqrt{x^2\pm a^2}\,dx = \frac{x}{2}\sqrt{x^2\pm a^2} \pm \frac{a^2}{2}\ln\left|x+\sqrt{x^2\pm a^2}\right| +$$