Ableitungs- und Stammfunktionen

$f(x)$	$f'(x)$	$\int f(x)dx$
$k \quad (k \in \mathbb{R})$	0	$k\,x + c$
$x^n \quad (n \in \mathbb{R})$	$n\,x^{n-1}$	$n \neq -1$: $\frac{x^{n+1}}{n+1} + c$ $n = -1$: $\ln\lvert x\rvert + c$
e^x $a^x \quad (a > 0)$	e^x $a^x \cdot \ln a$	$e^x + c$ $\frac{a^x}{\ln a} + c$
$\ln x$ $\log_a x \quad (a > 0)$	$\frac{1}{x}$ $\frac{1}{x} \cdot \frac{1}{\ln a}$	$x\,(\ln x - 1) + c$ $x\,(\log_a x - \frac{1}{\ln a}) + c$
$\sin x$	$\cos x$	$-\cos x + c$
$\cos x$	$-\sin x$	$\sin x + c$
$\tan x := \frac{\sin x}{\cos x}$	$\frac{1}{\cos^2 x} = 1 + \tan^2 x$	$-\ln\lvert\cos x\rvert + c$
$\cot x := \frac{1}{\tan x}$	$-\frac{1}{\sin^2 x} = -1 - \cot^2 x$	$\ln\lvert\sin x\rvert + c$
$\arcsin x$	$\frac{1}{\sqrt{1-x^2}}$	$\sqrt{1-x^2} + x \arcsin x + c$
$\arccos x$	$-\frac{1}{\sqrt{1-x^2}}$	$-\sqrt{1-x^2} + x \arccos x + c$
$\arctan x$	$\frac{1}{1+x^2}$	$x \arctan x - \frac{1}{2}\ln(1+x^2) + c$
$\operatorname{arccot} x$	$-\frac{1}{1+x^2}$	$x \operatorname{arccot} x + \frac{1}{2}\ln(1+x^2) + c$
$\sinh x := \frac{e^x - e^{-x}}{2}$	$\cosh x$	$\cosh x$
$\cosh x := \frac{e^x + e^{-x}}{2}$	$\sinh x$	$\sinh x$
$\tanh x := \frac{\sinh x}{\cosh x}$	$\frac{1}{\cosh^2 x} = 1 - \tanh^2 x$	$\ln(\cosh x) + c$
$\coth x := \frac{1}{\tanh x}$	$-\frac{1}{\sinh^2 x} = 1 - \coth^2 x$	$\ln\lvert\sinh x\rvert + c$
$\operatorname{arsinh} x = \ln(x + \sqrt{x^2+1})$	$\frac{1}{\sqrt{x^2+1}}$	$-\sqrt{x^2+1} + x \operatorname{arsinh} x + c$
$\operatorname{arcosh} x = \ln(x + \sqrt{x^2-1})$	$\frac{1}{\sqrt{x^2-1}}$	$-\sqrt{x^2-1} + x \operatorname{arcosh} x + c$
$\operatorname{artanh} x = \frac{1}{2}\ln(\frac{1+x}{1-x})$	$\frac{1}{1-x^2}$	$x \operatorname{artanh} x + \frac{1}{2}\ln(1-x^2) + c$
$\operatorname{arcoth} x = \frac{1}{2}\ln(\frac{x+1}{x-1})$	$\frac{1}{1-x^2}$	$x \operatorname{arcoth} x + \frac{1}{2}\ln(x^2-1) + c$
$\sin x \cos x$	$\cos^2 x - \sin^2 x = \cos(2x)$	$\frac{1}{2}\sin^2 x + c$ *oder:* $-\frac{1}{2}\cos^2 x + c$
$\sin^2 x$	$2\sin x \cos x = \sin(2x)$	$\frac{1}{2}(x - \sin x \cos x) + c$
$\cos^2 x$	$-2\sin x \cos x = -\sin(2x)$	$\frac{1}{2}(x + \sin x \cos x) + c$

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