| Ableitung $f'$; $f'=F''$ | Funktion $f$; $f=F'$ | eine Stammfunktion $F$ zu $f$ |
|---|---|---|
| $f'(x)$ | $f(x)$ | $F(x)$ |
| $0$ | $a$ (konstant) | $a \cdot x$ |
| $r \cdot x^{r-1}$ | $x^r \quad (r \in \mathbb{R})$ | $\frac{1}{r+1} \cdot x^{r+1} \quad (r \neq -1)$ |
| $-\frac{1}{x^2}$ | $\frac{1}{x} \quad (x \neq 0)$ | $\ln \lvert x \rvert$ |
| | $\frac{u'(x)}{u(x)} \quad (u(x) \neq 0)$ | $\ln \lvert u(x) \rvert$ |
| $e^x$ | $e^x$ | $e^x$ |
| $a^x \cdot \ln a$ | $a^x \quad (a>0;\ a \neq 1)$ | $a^x \cdot (\ln a)^{-1}$ |
| $\frac{1}{x}$ | $\ln x \quad (x>0)$ | $x \cdot \ln x - x$ |
| $\frac{1}{x \cdot \ln b}$ | $\log_b x \quad (x>0)$ | $\frac{1}{\ln b} \cdot (x \cdot \ln x - x)$ |
| $\cos x$ | $\sin x$ | $-\cos x$ |
| $-\sin x$ | $\cos x$ | $\sin x$ |
| $\frac{1}{\cos^2 x} = 1 + \tan^2 x$ | $\tan x \quad \left(x \neq (2z+1)\frac{\pi}{2},\ z \in \mathbb{Z}\right)$ | $-\ln \lvert \cos x \rvert$ |
| $\frac{-1}{\sin^2 x} = -(1+\cot^2 x)$ | $\cot x \quad (x \neq z\pi,\ z \in \mathbb{Z})$ | $\ln \lvert \sin x \rvert$ |
| $\frac{-\cos x}{\sin^2 x} \quad (x \neq z\pi,\ z \in \mathbb{Z})$ | $\frac{1}{\sin x}$ | $\ln \left\lvert \tan \frac{x}{2} \right\rvert$ |
| $\frac{\sin x}{\cos^2 x} \quad \left(x \neq (2z+1)\frac{\pi}{2},\ z \in \mathbb{Z}\right)$ | $\frac{1}{\cos x}$ | $\ln \left\lvert \tan\left(\frac{x}{2} + \frac{\pi}{4}\right) \right\rvert$ |
| $2 \sin x \cdot \cos x = \sin 2x$ | $\sin^2 x$ | $\frac{1}{2}(x - \sin x \cdot \cos x)$ |
| $-\sin 2x$ | $\cos^2 x$ | $\frac{1}{2}(x + \sin x \cdot \cos x)$ |
| $\frac{1}{\sqrt{1-x^2}} \quad (\lvert x \rvert < 1)$ | $\arcsin x$ | $x \cdot \arcsin x + \sqrt{1-x^2}$ |
| $-\frac{1}{\sqrt{1-x^2}} \quad (\lvert x \rvert < 1)$ | $\arccos x$ | $x \cdot \arccos x - \sqrt{1-x^2}$ |
| $\frac{1}{1+x^2}$ | $\arctan x$ | $x \cdot \arctan x - \frac{1}{2}\ln(1+x^2)$ |
| $-\frac{1}{1+x^2}$ | $\operatorname{arccot} x$ | $x \cdot \operatorname{arccot} x + \frac{1}{2}\ln(1+x^2)$ |
| $\cosh x$ | $\sinh x := \frac{e^x - e^{-x}}{2}$ | $\cosh x$ |
| $\sinh x$ | $\cosh x := \frac{e^x + e^{-x}}{2}$ | $\sinh x$ |
| $\frac{1}{\cosh^2 x}$ | $\tanh x := \frac{\sinh x}{\cosh x}$ | $\ln \cosh x$ |
| $\frac{1}{\sqrt{x^2+1}}$ | $\operatorname{arsinh} x = \ln(x + \sqrt{x^2+1})$ | $x \cdot \operatorname{arsinh} x - \sqrt{x^2+1}$ |
| $\frac{1}{\sqrt{x^2-1}} \quad (\lvert x \rvert > 1)$ | $\operatorname{arcosh} x = \ln(x + \sqrt{x^2-1})$ | $x \cdot \operatorname{arcosh} x - \sqrt{x^2-1}$ |
| $\frac{1}{1-x^2} \quad (\lvert x \rvert < 1)$ | $\operatorname{artanh} x = \frac{1}{2} \cdot \ln \frac{1+x}{1-x}$ | $x \cdot \operatorname{artanh} x + \frac{1}{2}\ln(1-x^2)$ |