

ELEMENTARE INTEGRATIONEN

$$\int x^\alpha dx = \frac{x^{\alpha+1}}{\alpha+1} \quad (\alpha \in \mathbb{R} \setminus \{-1\}) \quad , \quad \int \frac{dx}{x} = \ln|x|$$

$$\int \cos x dx = \sin x \quad , \quad \int \sin x dx = -\cos x$$

$$\int e^x dx = e^x \quad , \quad \int a^x dx = \frac{a^x}{\ln a} \quad (a > 0).$$

$$\int \cosh dx = \sinh x \quad , \quad \int \sinh dx = \cosh x$$

$$\int \frac{dx}{1+x^2} = \arctan x \quad , \quad \int \frac{dx}{1-x^2} = \frac{1}{2} \ln \left| \frac{1+x}{1-x} \right|$$

$$\int \frac{dx}{\sqrt{1+x^2}} = \ln(x + \sqrt{1+x^2}) \quad , \quad \int \frac{dx}{\sqrt{1-x^2}} = \arcsin x \quad (|x| < 1)$$

$$\int \frac{dx}{\sqrt{x^2-1}} = \operatorname{ar} \cosh x \quad (x > 1)$$

$$\int \frac{dx}{\cos^2 x} = \tan x \quad , \quad \int \frac{dx}{\sin^2 x} = -\operatorname{ctg} x$$

$$\int \tan x dx = -\ln |\cos x| \quad , \quad \int \operatorname{ctg} x dx = \ln |\sin x|$$

$$\int \sin^2 x dx = \frac{1}{2}(x - \sin x \cos x) \quad , \quad \int \cos^2 x dx = \frac{1}{2}(x + \sin x \cos x)$$

$$\int f'(x)/f(x) dx = \ln f(x) \quad (f > 0).$$