Integralrechnung – Grund- und Stammintegrale

$\int x^n dx = \frac{x^{n+1}}{n+1} + C$
$\int \frac{1}{x} dx = \ln\lvert x \rvert + C$
$\int e^x dx = e^x + C$
$\int a^x dx = \frac{a^x}{\ln a} + C$
$\int \sin x dx = -\cos x + C$
$\int \cos x dx = \sin x + C$
$\int \frac{1}{\cos^2 x} dx = \tan x + C$
$\int \frac{1}{\sin^2 x} dx = -\cot x + C$
$\int \frac{1}{\sqrt{1-x^2}} dx = \begin{cases} \arcsin x + C_1 \\ -\arccos x + C_2 \end{cases}$
$\int \frac{1}{1+x^2} dx = \begin{cases} \arctan x + C_1 \\ -\mathrm{arccot} x + C_2 \end{cases}$
$\int \sinh x dx = \cosh x + C$
$\int \cosh x dx = \sinh x + C$
$\int \frac{1}{\cosh^2 x} dx = \tanh x + C$
$\int \frac{1}{\sinh^2 x} dx = -\coth x + C$
$\int \frac{1}{\sqrt{x^2+1}} dx = \mathrm{arsinh} x + C = \ln\left\lvert x + \sqrt{x^2+1} \right\rvert + C$
$\int \frac{1}{\sqrt{x^2-1}} dx = \mathrm{arcosh}\lvert x \rvert + C = \ln\left\lvert x + \sqrt{x^2-1} \right\rvert + C$
$\int \frac{1}{1-x^2} dx = \begin{cases} \mathrm{artanh} x + C_1 = \frac{1}{2} \cdot \ln\left(\frac{1+x}{1-x}\right) + C_1 & \text{für } \lvert x \rvert < 1 \\ \mathrm{arcoth} x + C_2 = \frac{1}{2} \cdot \ln\left(\frac{x+1}{x-1}\right) + C_2 & \text{für } \lvert x \rvert > 1 \end{cases}$

... working with boundless passion

Alexander Halles 2004