

Fórmulas básicas de Diferenciação

$$D_x u^n = nu^{n-1} D_x u$$

$$D_x (u + v) = D_x u + D_x v$$

$$D_x (uv) = uD_x v + vD_x u$$

$$D_x \left(\frac{u}{v} \right) = \frac{uD_x v - vD_x u}{v^2}$$

$$D_x \sec^{-1}(u) = \frac{D_x u}{|u|\sqrt{u^2 - 1}}$$

$$D_x \csc^{-1}(u) = \frac{-D_x u}{|u|\sqrt{u^2 - 1}}$$

$$D_x \int_a^u f(t) dt = f(u) D_x u$$

$$D_x \sec(u) = \sec(u) \tan(u) D_x u$$

$$D_x \csc(u) = -\csc(u) \cot(u) D_x u$$

$$D_x \sin^{-1}(u) = \frac{D_x u}{\sqrt{1 - u^2}}$$

$$D_x \sin(u) = \cos(u) D_x u$$

$$D_x \cos(u) = -\sin(u) D_x u$$

$$D_x \tan(u) = \sec^2(u) D_x u$$

$$D_x \cot(u) = -\csc^2(u) D_x u$$

$$D_x \sinh(u) = \cosh(u) D_x u$$

$$D_x \cosh(u) = \sinh(u) D_x u$$

$$D_x \tanh(u) = \operatorname{sech}^2(u) D_x u$$

$$D_x \ln(u) = \frac{D_x u}{u}$$

$$D_x e^u = e^u D_x u$$

$$D_x a^u = a^u \ln a D_x u$$

$$D_x \log_a u = \frac{D_x u}{u \ln a}$$

$$D_x \cos^{-1}(u) = \frac{-D_x u}{\sqrt{1 - u^2}}$$

$$D_x \tan^{-1}(u) = \frac{D_x u}{1 + u^2}$$

$$D_x \cot^{-1}(u) = \frac{-D_x u}{1 + u^2}$$

$$D_x \operatorname{coth}(u) = -\operatorname{csch}^2(u) D_x u$$

$$D_x \operatorname{sech}(u) = -\operatorname{sech}(u) \tanh(u) D_x u$$

$$D_x \operatorname{csch}(u) = -\operatorname{csch}(u) \operatorname{coth}(u) D_x u$$

Fórmulas básicas de Integração

$$\int u^n du = \frac{u^{n+1}}{n+1} + C (n \neq -1)$$

$$\int \frac{du}{u} = \ln|u| + C$$

$$\int e^u du = e^u + C$$

$$\int a^u du = \frac{a^u}{\ln a} + C$$

$$\int \tan(u) du = -\ln|\cos(u)| + C$$

$$\int \cot(u) du = \ln|\sin(u)| + C$$

$$\int \frac{du}{a^2 + u^2} = \frac{1}{a} \tan^{-1}\left(\frac{u}{a}\right) + C$$

$$\int \frac{du}{u\sqrt{u^2 - a^2}} = \frac{1}{a} \sec^{-1}\left(\left|\frac{u}{a}\right|\right) + C$$

$$\int \sin(u) du = -\cos(u) + C$$

$$\int \cos(u) du = \sin(u) + C$$

$$\int \sec^2(u) du = \tan(u) + C$$

$$\int \sec(u) du = \ln|\sec(u) + \tan(u)| + C$$

$$\int \csc(u) du = \ln|\csc(u) - \cot(u)| + C$$

$$\int \sin^2(u) du = \frac{1}{2}u - \frac{1}{4}\sin(2u) + C$$

$$\int \sinh(u) du = \cosh(u) + C$$

$$\int \cosh(u) du = \sinh(u) + C$$

$$\int \operatorname{sech}^2(u) du = \tanh(u) + C$$

$$\int \csc^2(u) du = -\cot(u) + C$$

$$\int \sec(u) \tan(u) du = \sec(u) + C$$

$$\int \csc(u) \cot(u) du = -\csc(u) + C$$

$$\int \cos^2(u) du = \frac{1}{2}u + \frac{1}{4}\sin(2u) + C$$

$$\int \frac{du}{\sqrt{a^2 - u^2}} = \sin^{-1}\left(\frac{u}{a}\right) + C$$

$$\int \operatorname{csc}^2(u) du = -\cot(u) + C$$

$$\int \operatorname{sech}(u) \tanh(u) du = -\operatorname{sech}(u) + C$$

$$\int \operatorname{csc}^2(u) du = -\cot(u) + C$$

$$\int u dv = uv - \int v du + C$$