

Primitivas Imediatas**Primitivas Quase Imediatas**

$$\int x^\alpha dx = \frac{x^{\alpha+1}}{\alpha+1} + C$$

$$\int f(x)^\alpha f'(x) dx = \frac{f(x)^{\alpha+1}}{\alpha+1} + C$$

$$\int e^x dx = e^x + C$$

$$\int e^{f(x)} f'(x) dx = e^{f(x)} + C$$

$$\int a^x \ln a dx = a^x + C$$

$$\int a^{f(x)} f'(x) \ln a dx = a^{f(x)} + C$$

$$\int \frac{1}{x} dx = \ln |x| + C$$

$$\int \frac{f'(x)}{f(x)} dx = \ln |f(x)| + C$$

$$\int \frac{1}{x \ln a} dx = \log_a |x| + C$$

$$\int \frac{f'(x)}{f(x) \ln a} dx = \log_a |f(x)| + C$$

$$\int \cos x dx = \sin x + C$$

$$\int \cos [f(x)] f'(x) dx = \sin [f(x)] + C$$

$$\int \sin x dx = -\cos x + C$$

$$\int \sin [f(x)] f'(x) dx = -\cos [f(x)] + C$$

$$\int \frac{1}{\cos^2 x} dx = \tan x + C$$

$$\int \frac{f'(x)}{\cos^2 [f(x)]} dx = \tan [f(x)] + C$$

Funções Elementares**Funções Compostas**

$$(x^\alpha)' = \alpha x^{\alpha-1}$$

$$[f(x)^\alpha]' = \alpha f(x)^{\alpha-1} f'(x)$$

$$(e^x)' = e^x$$

$$[e^{f(x)}]' = e^x f'(x)$$

$$(a^x)' = a^x \ln a$$

$$[a^{f(x)}]' = a^{f(x)} f'(x) \ln a$$

$$(\ln x)' = \frac{1}{x}$$

$$[\ln f(x)]' = \frac{f'(x)}{f(x)}$$

$$(\log_a x)' = \frac{1}{x \ln a}$$

$$[\log_a f(x)]' = \frac{f'(x)}{f(x) \ln a}$$

$$(\sin x)' = \cos x$$

$$[\sin f(x)]' = \cos [f(x)] f'(x)$$

$$(\cos x)' = -\sin x$$

$$[\cos f(x)]' = -\sin [f(x)] f'(x)$$

$$(\tan x)' = \frac{1}{\cos^2 x}$$

$$[\tan f(x)]' = \frac{f'(x)}{\cos^2 [f(x)]}$$

$$(\sinh x)' = \cosh x$$

$$[\sinh f(x)]' = \cosh [f(x)] f'(x)$$

$$(\cosh x)' = \sinh x$$

$$[\cosh f(x)]' = \sinh [f(x)] f'(x)$$

$$(\tanh x)' = \frac{1}{\cosh^2 x}$$

$$[\tanh f(x)]' = \frac{f'(x)}{\cosh^2 [f(x)]}$$

Linearidade da Derivada Linearidade da Primitiva

$$f(x) \pm g(x)]' = f'(x) \pm g'(x) \quad \int [f(x) + g(x)]dx = \int f(x)dx + \int g(x)dx$$

$$[cf(x)]' = cf'(x) \quad \int cf(x)dx = c \int f(x)dx$$

Derivada do Produto e do Quociente Primitivação por Partes

$$(fg)' = f'g + fg' \quad \left(\frac{f}{g}\right)' = \frac{f'g - fg'}{g^2} \quad \int [f(x) + g(x)]dx = \int f(x)dx + \int g(x)dx$$