

## Lista de Primitivas

$$\text{P } c = cx \quad (\text{para } c \in \mathbb{R})$$

$$\text{P } x^\alpha = \frac{x^{\alpha+1}}{\alpha+1} \quad (\text{para } \alpha \neq -1)$$

$$\text{P } u'(x)u(x)^\alpha = \frac{u(x)^{\alpha+1}}{\alpha+1} \quad (\text{para } \alpha \neq -1)$$

$$\text{P } \frac{1}{x} = \log |x|$$

$$\text{P } \frac{u'(x)}{u(x)} = \log |u(x)|$$

$$\text{P } e^x = e^x$$

$$\text{P } u'(x)e^{u(x)} = e^{u(x)}$$

$$\text{P } a^x = \frac{a^x}{\log a}$$

$$\text{P } \sin x = -\cos x$$

$$\text{P } u'(x) \sin u(x) = -\cos u(x)$$

$$\text{P } \cos x = \sin x$$

$$\text{P } \sec^2 x = \tan x$$

$$\text{P } u'(x) \sec^2 u(x) = \tan u(x)$$

$$\text{P } \operatorname{cosec}^2 x = -\cotg x$$

$$\text{P } \frac{1}{1+x^2} = \arctg x$$

$$\text{P } \frac{u'(x)}{1+u(x)^2} = \arctg u(x)$$

$$\text{P } \frac{1}{\sqrt{1-x^2}} = \arcsen x$$

$$\text{P } \frac{u'(x)}{\sqrt{1-u(x)^2}} = \arcsen u(x)$$

$$\text{P } -\frac{1}{\sqrt{1-x^2}} = \arccos x$$

$$\text{P } \operatorname{sh} x = \operatorname{ch} x$$

$$\text{P } u'(x) \operatorname{sh} u(x) = \operatorname{ch} u(x)$$

$$\text{P } \operatorname{ch} x = \operatorname{sh} x$$

Observações: Qualquer outra primitiva deverá ser deduzida a partir destas, recorrendo aos diversos métodos estudados. Exemplo:

$$\text{P } \frac{1}{4+x^2} = \text{P } \frac{1}{4(1+\frac{x^2}{4})} = \frac{1}{4} \text{P } \frac{1}{1+(\frac{x}{2})^2} = \frac{1}{4} \text{P } \frac{\frac{1}{2}}{1+(\frac{x}{2})^2} \cdot 2 = \frac{1}{2} \arctg \frac{x}{2}$$