TABELA DAS DERIVADAS

Função	Função Derivada
$f(x) = a, a \in \mathbb{R}$	$f'(x) = 0$
$f(x) = x^n$	$f'(x) = n.x^{n-1}$
$f(x) = a^x, a > 0 \text{ e } a \neq 1$	$f'(x) = a^x.\ln a$
$f(x) = e^x$	$f'(x) = e^x$
$f(x) = \log_b x, b > 0 \text{ e } b \neq 1$	$f'(x) = \frac{1}{x}.\log_b e$
$f(x) = \ln x$	$f'(x) = \frac{1}{x}$
$f(x) = \text{sen}x$	$f'(x) = \cos x$
$f(x) = \cos x$	$f'(x) = -\text{sen}x$
$f(x) = \text{tg}x$	$f'(x) = \sec^2 x$
$f(x) = \text{cotg}x$	$f'(x) = -\text{cossec}^2 x$
$f(x) = \sec x$	$f'(x) = \sec x.\text{tg}x$
$f(x) = \text{cossec}x$	$f'(x) = -\text{cossec}x.\text{cotg}x$
$f(x) = \text{arcsen}x$	$f'(x) = \frac{1}{\sqrt{1-x^2}}$
$f(x) = \arccos x$	$f'(x) = -\frac{1}{\sqrt{1-x^2}}$
$f(x) = \text{arctg}x$	$f'(x) = \frac{1}{1+x^2}$
$f(x) = \text{arccotg}x$	$f'(x) = -\frac{1}{1+x^2}$
$f(x) = \text{arcsec}x$	$f'(x) = \frac{1}{x.\sqrt{x^2-1}}$
$f(x) = \text{arccosec}x$	$f'(x) = -\frac{1}{x.\sqrt{x^2-1}}$

TABELA DE FUNÇÕES DERIVADAS

• *Derivadas*

Sejam u e v funções deriváveis de x e n constante.

1. $y = u^n \Rightarrow y' = n\,u^{n-1}u'$.
2. $y = uv \Rightarrow y' = u'v + v'u$.
3. $y = \frac{u}{v} \Rightarrow y' = \frac{u'v - v'u}{v^2}$.
4. $y = a^u \Rightarrow y' = a^u(\ln a)\,u',\ (a > 0,\ a \neq 1)$.
5. $y = e^u \Rightarrow y' = e^u u'$.
6. $y = \log_a u \Rightarrow y' = \frac{u'}{u}\log_a e$.
7. $y = \ln u \Rightarrow y' = \frac{1}{u}u'$.
8. $y = u^v \Rightarrow y' = v\,u^{v-1}\,u' + u^v(\ln u)\,v'$.
9. $y = \text{sen}\ u \Rightarrow y' = u'\cos\ u$.
10. $y = \cos\ u \Rightarrow y' = -u'\text{sen}\ u$.
11. $y = \text{tg}\ u \Rightarrow y' = u'\sec^2 u$.
12. $y = \text{cotg}\ u \Rightarrow y' = -u'\text{cosec}^2 u$.
13. $y = \sec\ u \Rightarrow y' = u'\sec\ u\ \text{tg}\ u$.
14. $y = \text{cosec}\ u \Rightarrow y' = -u'\text{cosec}\ u\ \text{cotg}\ u$.
15. $y = arc\ \text{sen}\ u \Rightarrow y' = \frac{u'}{\sqrt{1-u^2}}$.
16. $y = arc\ \cos\ u \Rightarrow y' = \frac{-u'}{\sqrt{1-u^2}}$.
17. $y = arc\ \text{tg}\ u \Rightarrow y' = \frac{u'}{1+u^2}$.
18. $y = arc\ \text{cot}\,g\ u \Rightarrow \frac{-u'}{1+u^2}$.
19. $y = arc\ \sec\ u,\ |u| \geqslant 1$
$\Rightarrow y' = \frac{u'}{|u|\sqrt{u^2-1}},\ |u| > 1$.
20. $y = arc\ \text{cosec}\ u,\ |u| \geqslant 1$
$\Rightarrow y' = \frac{-u'}{|u|\sqrt{u^2-1}},\ |u| > 1$.