Limites Notáveis

$$\lim_{x\to 0} \frac{\operatorname{sen}(x)}{x} = 1$$

$$\lim_{x\to 0} \frac{e^x - 1}{x} = 1$$

$$\lim_{x\to 0} \frac{\ln(x+1)}{x} = 1$$

$$\lim_{x\to +\infty} \frac{\ln(x)}{x} = 0$$

$$\lim_{x\to +\infty} \frac{e^x}{x^p} = +\infty, p \in \mathbb{R}$$

Fórmulas Trigonométricas

$$\operatorname{sen}^2(x) + \cos^2(x) = 1$$

$$\operatorname{tg}^2(x) + 1 = \sec^2(x)$$

$$\operatorname{sen}(x \pm y) = \operatorname{sen}(x)\cos(y) \pm \cos(x)\operatorname{sen}(y)$$

$$\cos(x \pm y) = \cos(x)\cos(y) \mp \operatorname{sen}(x)\operatorname{sen}(y)$$

$$\operatorname{sen}(2x) = 2\operatorname{sen}(x)\cos(x)$$

$$\cos(2x) = \cos^2(x) - \operatorname{sen}^2(x)$$

Fórmulas Hiperbólicas

$$\cosh^2(x) - \operatorname{senh}^2(x) = 1$$

$$\operatorname{tgh}^2(x) = 1 - \operatorname{sech}^2(x)$$

$$\operatorname{senh}(x \pm y) = \operatorname{senh}(x)\cosh(y) \pm \cosh(x)\operatorname{senh}(y)$$

$$\cosh(x \pm y) = \cosh(x)\cosh(y) \pm \operatorname{senh}(x)\operatorname{senh}(y)$$

$$\operatorname{senh}(2x) = 2\operatorname{senh}(x)\cosh(x)$$

$$\cosh(2x) = \operatorname{senh}^2(x) + \cosh^2(x)$$

Regras Básicas de Derivação

Função	Derivada
$Cu(x)$	$Cu'(x),\ C \in \mathbb{R}$
$u(x) + v(x)$	$u'(x) + v'(x)$
$u(x)v(x)$	$u'(x)v(x) + u(x)v'(x)$
$\frac{u(x)}{v(x)}$	$\frac{u'(x)v(x) - u(x)v'(x)}{(v(x))^2}$

Regras de Primitivação

Função	Primitiva
$u'(x)\,(u(x))^\alpha$	$\frac{(u(x))^{\alpha+1}}{\alpha+1},\ \alpha \in \mathbb{R}\setminus\{-1\}$
$u'(x)\cos(u(x))$	$\operatorname{sen}(u(x))$
$-u'(x)\operatorname{sen}(u(x))$	$\cos(u(x))$
$u'(x)\sec^2(u(x))$	$\operatorname{tg}(u(x))$
$-u'(x)\operatorname{cosec}^2(u(x))$	$\operatorname{cotg}(u(x))$
$u'(x)\sec(u(x))\operatorname{tg}(u(x))$	$\sec(u(x))$
$-u'(x)\operatorname{cosec}(u(x))\operatorname{cotg}(u(x))$	$\operatorname{cosec}(u(x))$
$\frac{u'(x)}{\sqrt{1-(u(x))^2}}$	$\arcsen(u(x))$
$-\frac{u'(x)}{\sqrt{1-(u(x))^2}}$	$\arccos(u(x))$
$\frac{u'(x)}{1+(u(x))^2}$	$\operatorname{arctg}(u(x))$
$-\frac{u'(x)}{1+(u(x))^2}$	$\operatorname{arccotg}(u(x))$
$\ln(a)u'(x)a^{u(x)}$	$a^{u(x)},\ a \in \mathbb{R}^+\setminus\{1\}$
$u'(x)e^{u(x)}$	$e^{u(x)}$
$\frac{u'(x)}{\ln(a)u(x)}$	$\log_a\lvert u(x)\rvert,\ a \in \mathbb{R}^+\setminus\{1\}$
$\frac{u'(x)}{u(x)}$	$\ln\lvert u(x)\rvert$
$-u'(x)\operatorname{tg}(u(x))$	$\ln\lvert\cos(u(x))\rvert$
$u'(x)\operatorname{cotg}(u(x))$	$\ln\lvert\operatorname{sen}(u(x))\rvert$
$u'(x)\sec(u(x))$	$\ln\lvert\sec(u(x)) + \operatorname{tg}(u(x))\rvert$
$-u'(x)\operatorname{cosec}(u(x))$	$\ln\lvert\operatorname{cosec}(u(x)) + \operatorname{cotg}(u(x))\rvert$
$u'(x)\cosh(u(x))$	$\operatorname{senh}(u(x))$
$u'(x)\operatorname{senh}(u(x))$	$\cosh(u(x))$