Definição de derivada:		Equação da reta tangente:	
$\lim_{\Delta x \to 0} \frac{f(x_1+h)-f(x_1)}{\Delta x}$		$y - f(x_1) = m\,(x - x_1)$	
Taxa de variação/velocidade média	Aceleração	Instante/razão	Aceleração Média
$\frac{\Delta y}{\Delta x} = \frac{f(x2)-f(x1)}{x2-x1}$	$\frac{Velocidade}{tempo}$	$\frac{dx}{dy} = f'(x)$	$\frac{\Delta s}{\Delta t} = \frac{f'(x2)-f'(x1)}{x2-x1}$
Taxa de variação instantânea	Taxas relacionadas	Derivada implícita	
$dv = dv.dt = f'(x)$	$\frac{dv}{dt} = \frac{dv}{dh}.\frac{dh}{dt}$	$y' = \frac{\Delta y}{\Delta x}$ - Em todo y acrescenta y'	

	Descrição	Função	Derivada
1	Constante	y=c	y'=0
2	X	y=x	y'=1
3	Constante/ função	y=c.u	y'=c.u'
4	Soma	y=u+v	y'=u'+v'
5	Produto	y=u.v	$y'=u'.v+u.v'.$
6	Quociente	$y=\frac{u}{v}$	$y'=\frac{u'.v-u.v'}{v^2}$
7	Potência exp racional	$y=u^n$ n≠0	$y'=n.u^{n-1}.u'$
8	Exponencial base a	$y=a^u$ a>0 a≠1	$y'=a^u.lna.u'$
9	Exponencial base e	$y=e^u$	$y'=e^u.u'$
10	Logaritmo	$y=log_{a^e}$	$y'=\frac{u'}{u} log_{a^e}$
11	Exponencial composta	$y=u^v$ u>0	$y'=v.u^{v-1}.u'+u^v.\ln u.v'$
12	Ln	$y=\ln u$	$y'=\frac{u'}{u}$
13	Trigonométricas	y=sen u	$y'=cos\ u.u'$
14		y=cos u	$y'=-sen\ u.u'$
15		y=tg u	$y'=sec^2\ u.u'$
16		y=sec u	$y'=secu.tgu.u'$
17		y=cotg u	$y'=-cosec^2\ u\ .u'$
18		y=cosec u	$y'=-cosecu\ .cotgu.u'$
19		y=arc sen u	$y'=\frac{u'}{\sqrt{1-u^2}}$
20		y=arc cos u	$y'=\frac{-u'}{\sqrt{1-u^2}}$
21		y=arc tg u	$y'=\frac{u'}{1+u^2}$
22		y=arc cotg u	$y'=\frac{-u'}{1+u^2}$
23		y=arc cos u |u| ≥1	$y'=\frac{-u'}{\lvert u\rvert\sqrt{u^2-1}}, \lvert u\rvert > 1$
24		y=arc sec u |u| ≥1	$y'=\frac{u'}{\lvert u\rvert\sqrt{u^2-1}}, \lvert u\rvert > 1$
25		y=senh u	$y'=(cosh\ u).u'$
26		y=cosh u	$y'=(senh\ u).u'$
27		y=tgh u	$y'=(senh^2\ u).u'$
28		y=cotgh u	$y'=(-cosech^2\ u).u'$
29		y=sech u	$y'=(-sech\ u).(tgh\ u)u'$
30		y=cosech u	$y'=(-cosech\ u).(cotgh\ u).u'$
31		y=arc senh u	$y'=\frac{u'}{\sqrt{u^2+1}}$
32		y=arg cosh u	$y'=\frac{u'}{\sqrt{u^2-1}}, u > 1$
33		y=arg tgh u	$y'=\frac{u'}{1-u^2}, \lvert u\rvert < 1$
34		y=arg cotgh u	$y'=\frac{u'}{1-u^2}, \lvert u\rvert > 1$
35		y=arg sech u	$y'=\frac{-u'}{u\sqrt{1-u^2}}, 0 < u < 1$
36		y=arg scosech u	$y'=\frac{u'}{\lvert u\rvert\sqrt{1-u^2}}, u \neq 0$
37	Composta/Cadeia	$y=[g(x)]^n$	$y= n\ [g(x)]^{n-1}$. g'(x)
38	Logaritmo modular	$y=\log_a \lvert u\rvert$	$y'=\frac{u'}{u.ln\ a}$

Identidades Trigonométricas			
01	$sec^2x + cos^2x = 1$	**06**	$sen\ 2x = 2\ sen\ x \cos x$
02	$1 + tg^2x = sec^2x$	**07**	$2\ sen\ x \cos y\ = sen\ (x - y) + \text{sen}(x + y)$
03	$1 + cotg^2x = cosec^2x$	**08**	$2\ sen\ x \text{ sen } y\ = cos\ (x - y) - \cos(x + y)$
04	$sen^2x = \frac{1 - \cos 2x}{2}$	**09**	$2\ cos\ x \cos y\ = cos\ (x - y) + \cos(x + y)$
05	$cos^2x = \frac{1 + \cos 2x}{2}$	**10**	$1 \pm sen = 1 \pm cos\left(\frac{\pi}{2} - x\right)$
$\sec x = \frac{1}{\cos x}$		$\text{cotg}\, x = \frac{\cos x}{\text{sen}\, x}$	
$\text{cosec}\, x = \frac{1}{\text{sen}\, x}$		$\text{tag}\, x = \frac{\text{sen}\, x}{\cos x}$	

Regra de Potência	
$x^0 = 1$	$x^{-1} = \frac{1}{x}$
$x^m * x^n = x^{m+n}$	$x^{-n} = \frac{1}{x^{+n}}$
$\frac{x^m}{x^n} = x^{m-n}$	$\left(\frac{y}{x}\right)^{-n} = \left(\frac{x}{y}\right)^{+n}$
$(x^m)^n = x^{m*n}$	$\left(\frac{-y}{x}\right)^{-n} = \left(\frac{-x}{y}\right)^{+n}$
$\sqrt[n]{x^m} = x^{m/n}$	
$\left(\frac{x}{y}\right)^m = \frac{x^m}{y^m}$	

Fração

Divisão

$$\frac{\frac{x}{y}}{\frac{x}{y}} = \frac{x}{y} * \frac{y}{x}$$

Multiplicação

$$\frac{x}{y} * \frac{x}{y} = \frac{x * x}{y * y}$$

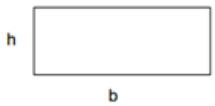
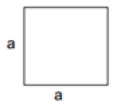
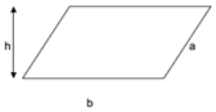
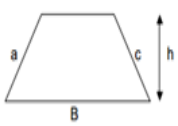
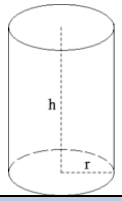
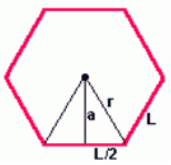
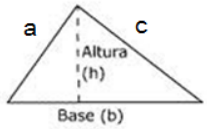
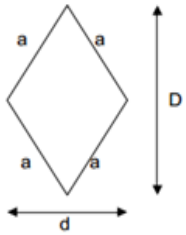
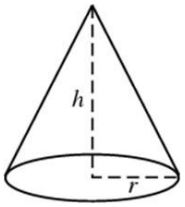
Adição/Subtração = MMC

$$\frac{x}{y} \pm \frac{x}{y} = \frac{(x * y) \pm (x * y)}{(y * y)}$$

Raiz

$$\sqrt{\frac{x}{y}} = \frac{\sqrt{x}}{\sqrt{y}}$$

Máximo e mínimos
1-Derivar - f'(x)
2-Calcular - f'(x)=0 – raízes – ponto critico
3-Verificar Crescente e Decrescente f'(x)=0 raízes > e <
4-Maximos e Mínimos - Função Original - f(x) - raízes
5-Ponto de Inflexão - f''(x)=0

RETÂNGULO	QUADRADO	PARALELOGRAMO	TRAPÉZIO	CILINDRO
				
$A = \text{b.h}$ $P = 2(\text{b.h})$	$A = \text{a}^2$ $P = 4a$	$A = \text{b.h}$ $P = 2(\text{b.h})$	$A = \frac{(B + b)}{2}.h$ $P = \text{a} + \text{b} + \text{c} + \text{B}$	$A = 2\pi.r.\text{h}$ $V = \pi.r^2.\text{h}$
HEXÁGONO	**CÍRCULO**	**TRIÂNGULO**	**LOSANGO**	**CONE**
				
$A = \text{a.P}/2$ $P = 6L$	$A = \pi r^2$ $P = 2\pi r$	$A = \frac{\text{b.h}}{2}$ $P = \text{a} + \text{b} + \text{c}$	$A = \frac{\text{D.d}}{2}$ $P = 4\text{a}$	$A = \pi.r.\sqrt{r^2 + h^2}$ $V = \frac{\pi.r^2.\text{h}}{3}$