

Taula de DERIVADES de funcions elementals

f(x)	f'(x)	f(x)	f'(x)
k	0	sen x	cos x
x	1	cos x	-sen x
x ⁿ	n.x ⁿ⁻¹	tg x	1+tg ² x
$\sqrt[n]{x}$	$\frac{1}{n \cdot \sqrt[n]{x^{n-1}}}$	cosec x	-cosecx.cotgx
1/x	-1/x ²	sec x	secx.tgx
e ^x	e ^x	cotg x	-(1+cotg ² x)
a ^x	a ^x .ln(a)	arcsen x	$\frac{1}{\sqrt{1-x^2}}$
ln(x)	1/x	arccos x	$-\frac{1}{\sqrt{1-x^2}}$
log _a (x)	1/x.log _a (e)	arctg x	$\frac{1}{1+x^2}$

Operacions amb funcions derivables

- (f+g)'(x)=f'(x)+g'(x)** (senx+lnx)'=(senx)'+(lnx)'=cosx+1/x
 (x⁴+tgx)'=(x⁴)'+(tgx)'=4x³+1+tg²x
- (f-g)'(x)=f'(x)-g'(x)** (5^x-cosx)'=(5^x)'-(cosx)'=5^x.ln5-(-senx)=5^x.ln5+senx
 (6-secx)'=(6)'-(secx)'=0-secx.tgx=-secx.tgx
- [k.f(x)]'=k.f'(x)** (4.lnx)'=4.(lnx)'=4.1/x=4/x
 (-8.e^x)'=-8.(e^x)'=-8.e^x
- (f.g)'(x)=f'(x).g(x)+f(x).g'(x)** (x³.cosx)'=(x³)'.cosx+x³.(cosx)'=3x².cosx+x³.(-senx)
 (e^x.lnx)'=(e^x)'.lnx+e^x.(lnx)'=e^x.lnx+e^x.1/x
- (f/g)'(x)= $\frac{f'(x).g(x)-f(x).g'(x)}{g^2(x)}$** $\left(\frac{\text{sen } x}{x}\right)' = \frac{(\text{sen } x)' \cdot x - \text{sen } x \cdot (x)'}{x^2} = \frac{\text{cos } x \cdot x - \text{sen } x \cdot 1}{x^2}$
 $\left(\frac{e^x}{x^2}\right)' = \frac{(e^x)' \cdot x^2 - e^x \cdot (x^2)'}{(x^2)^2} = \frac{e^x \cdot x^2 - e^x \cdot 2x}{x^4}$
- (g∘f)'(x)=g'[f(x)].f'(x)** (tg³x)'=(3tg²x).(tgx)'=3tg²x.(1+tg²x)
 (tgx³)'=(1+tg²x³).(x³)'=(1+tg²x³).3x²