Derivate

$\partial(c)=0$

$\partial(f(x))=1$

$\partial(f(x)\pm g(x))=f'(x)\pm g'(x)$

$\partial(f(x)g(x))=f'(x)g(x)+f(x)g'(x)$

$\partial\left(\frac{f(x)}{g(x)}\right)=\frac{f'(x)g(x)-f(x)g'(x)}{g^2(x)} \quad \forall g(x)\neq 0$

$\partial\left(\sqrt{f(x)}\right)=\frac{f'(x)}{2\sqrt{f(x)}}$

$\partial\left(f^{-1}(y)\right)=\frac{1}{f'\left[f^{-1}(y)\right]}$

$\partial\left(\frac{1}{f(x)}\right)=\partial\left(f^{-1}(x)\right)=-\frac{f'(x)}{[f(x)]^2}$

$\partial(Ln(x))=\frac{1}{x} \quad \forall x>0$

$\partial(Ln|f(x)|)=\frac{f'(x)}{f(x)} \quad \forall f(x)\neq 0$

$\partial\left([Ln(x)]^x\right)=\frac{[Ln(x)]^x}{Ln(x)+Ln(Ln(x))}$

$\partial(Log_a(x))=\frac{1}{x}Log_a(e)=\frac{1}{x\cdot Ln(a)} \quad \forall\begin{cases}a>0\\a\neq 1\\x>0\end{cases}$

$\partial\left(e^{cx}\right)=ce^{cx}$

$\partial\left(e^{f(x)}\right)=e^{f(x)}\cdot f'(x)$

$\partial(f[g(x)])=f'[g(x)]\cdot g'(x)$

$\partial\left(f(x)^n\right)=n\cdot[f(x)]^{n-1}\cdot g'(x) \quad \forall n\in\mathbb{N}$

$\partial\left(f(x)^{g(x)}\right)=\partial\left(e^{g(x)\cdot Ln[f(x)]}\right)=f(x)^{g(x)}\left[g'(x)\cdot\right.$

$\left.\cdot Ln(f(x))+\frac{g(x)f'(x)}{f(x)}\right] \quad \forall f(x)>0$

$\partial\left(e^{\frac{1}{Ln(x)}}\right)=-\frac{e^{\frac{1}{Ln(x)}}}{xLn^2(x)}$

$\partial\left(a^x\right)=a^x\cdot Ln(a) \quad \forall a>0$

$\partial\left(a^{f(x)}\right)=a^{f(x)}\cdot Ln(a)\cdot f'(x) \quad \forall a>0$

$\partial\left(x^n\right)=nx^{n-1} \quad \forall\begin{cases}x>0\\n\in\mathbb{N}\end{cases}$

$\partial\left(x^x\right)=x^x[1+Ln(x)]$

$\partial\left(\frac{1}{x^n}\right)=-\frac{n}{x^{n+1}}$

$\partial\left(\sqrt{x}\right)=\frac{1}{2\sqrt{x}}$

$\partial\left(\sqrt[n]{x}\right)=\frac{1}{n\sqrt[n]{x^{n-1}}} \quad :\mathbb{R}_+\to\mathbb{R}_+$

$\partial\left(\sqrt[x]{x}\right)=\left[1-Ln(x)\right]\cdot x^{\left(\frac{1}{x}\right)-1}$

$\partial(|x|)=\frac{x}{|x|}=\frac{|x|}{x} \quad \forall x\neq 0$

$\partial(|f(x)|)=\frac{f(x)}{|f(x)|}f'(x)=\frac{|f(x)|}{f(x)}f'(x)$

$\partial(Sin(x))=Cos(x)$

$\partial\left(Sin^2(x)\right)=2\cdot Sin(x)\cdot Cos(x)$

$\partial\left(\frac{1}{Sin(x)}\right)=-\frac{Cos(x)}{Sin^2(x)}$

$\partial(Cos(x))=-Sin(x)$

$\partial\left(Cos^2(x)\right)=-2\cdot Sin(x)\cdot Cos(x)$

$\partial\left(\frac{1}{Cos(x)}\right)=\frac{Sin(x)}{Cos^2(x)}$

$\partial\left(Sin(x)^{Cos(x)}\right)=Sin(x)^{Cos(x)}\cdot$

$\cdot\left[\frac{Cos^2(x)}{Sin(x)-Sin(x)\cdot Ln(Sin(x))}\right]$

$\partial\left(Cos(x)^{Sin(x)}\right)=Cos(x)^{Sin(x)}\cdot\left[Cos(x)\cdot\right.$

$\left.\cdot Ln(Cos(x))-Sin(x)\cdot Tg(x)\right]$

$\partial(Tg(x))=\frac{1}{Cos^2(x)}=1+Tg^2(x) \quad \forall x\in\mathbb{R}-\left\{\frac{\pi}{2}+k\pi\right\}$

$\partial\left(Tg^2(x)\right)=\frac{2Tg(x)}{Cos^2(x)}$

$\partial(Ctg(x))=-\frac{1}{Sin^2(x)}=-\left[1+Ctg^2(x)\right]$

$\partial(ArcSin(x))=\frac{1}{\sqrt{1-x^2}} \quad : \left]-1,1\right[\to\left[-\frac{\pi}{2},\frac{\pi}{2}\right]$

$\partial(ArcCos(x))=-\frac{1}{\sqrt{1-x^2}} \quad : \left]-1,1\right[\to\left]0,\pi\right[$

$\partial(ArcTg(x))=\frac{1}{1+x^2} \quad :\mathbb{R}\to\left]-\frac{\pi}{2},\frac{\pi}{2}\right[$

$$\partial\left(ArcCtg(x)\right) = -\frac{1}{1+x^2} \quad : \mathbb{R} \to]0,\pi[$$

$$\partial\left(SinH(x)\right) = CosH(x) \quad : \mathbb{R} \to \mathbb{R}$$

$$\partial\left(CosH(x)\right) = SinH(x) \quad : \mathbb{R} \to \mathbb{R}$$

$$\partial\left(TgH(x)\right) = \frac{1}{CosH^2(x)} = 1 - TgH^2(x)$$

$$\partial\left(CtgH(x)\right) = -\frac{1}{SinH^2(x)} = 1 - CtgH^2(x)$$

$$\partial\left(SettSinH(x)\right) = \frac{1}{\sqrt{1+x^2}}$$

$$\partial\left(SettCosH(x)\right) = \frac{1}{\sqrt{x^2-1}}$$

$$\partial\left(SettTgH(x)\right) = \frac{1}{1-x^2}$$

$$\partial\left(SettCtgH(x)\right) = \frac{1}{1-x^2}$$