Elenco derivate funzioni elementari

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Funzione	Derivata prima	Funzione composta	Derivata prima
$f(x) = k$ con $k \in \mathbb{R}$	$f'(x) = 0$		
$f(x) = x^\alpha$ con $\alpha \in \mathbb{R}$	$f'(x) = \alpha x^{\alpha-1}$	$g(x) = f(x)^\alpha$	$g'(x) = \alpha \cdot f'(x) \cdot f(x)^{\alpha-1}$
$f(x) = \sqrt{x}$	$f'(x) = \dfrac{1}{2\sqrt{x}}$	$g(x) = \sqrt{f(x)}$	$g'(x) = \dfrac{f'(x)}{2\sqrt{f(x)}}$
$f(x) = \sqrt[n]{x^m}$ con $m > n$	$f'(x) = \dfrac{m\sqrt[n]{x^{m-n}}}{n}$	$g(x) = \sqrt[n]{f(x)^m}$	$f'(x) = \dfrac{m \cdot \sqrt[n]{f(x)^{m-n}} \cdot f'(x)}{n}$
$f(x) = \sqrt[n]{x^m}$ con $m < n$	$f'(x) = \dfrac{m}{n\sqrt[n]{x^{n-m}}}$	$g(x) = \sqrt[n]{f(x)^m}$	$g'(x) = \dfrac{m \cdot f'(x)}{n\sqrt[n]{f(x)^{n-m}}}$
$f(x) = a^x$	$f'(x) = a^x \cdot \ln a$	$g(x) = a^{f(x)}$	$g'(x) = \ln a \cdot a^{f(x)} \cdot f'(x)$
$f(x) = e^x$	$f'(x) = e^x$	$g(x) = e^{f(x)}$	$g'(x) = e^{f(x)} \cdot f'(x)$
$f(x) = \log_a x$	$f'(x) = \dfrac{\log_a e}{x}$	$g(x) = \log_a f(x)$	$g'(x) = \dfrac{\log_a e \cdot f'(x)}{f(x)}$
$f(x) = \ln x$	$f'(x) = \dfrac{1}{x}$	$g(x) = \ln f(x)$	$g'(x) = \dfrac{f'(x)}{f(x)}$
$f(x) = x^x$	$f'(x) = x^x(\ln x + 1)$	$h(x) = f(x)^{g(x)}$	$h'(x) = f(x)^{g(x)}\left(g'(x)\ln f(x) + g(x) \cdot \dfrac{f'(x)}{f(x)}\right)$

Funzione	Derivata prima	Funzione composta	Derivata prima
$f(x) = \sin x$	$f'(x) = cosx$	$g(x) = \sin[f(x)]$	$g'(x) = \cos[f(x)] \cdot f'(x)$
$f(x) = \cos x$	$f'(x) = -\sin x$	$g(x) = \cos[f(x)]$	$g'(x) = -\sin[f(x)] \cdot f'(x)$
$f(x) = tgx$	$f'(x) = \dfrac{1}{\cos^2 x} = 1 + tg^2 x$	$g(x) = tg[f(x)]$	$g'(x) = \dfrac{f'(x)}{\cos^2[f(x)]}$
$f(x) = ctgx$	$f'(x) = -\dfrac{1}{\sin^2 x} = -(1 + ctg^2 x)$	$g(x) = ctg[f(x)]$	$g'(x) = -\dfrac{f'(x)}{\sin^2[f(x)]}$
$f(x) = \arcsin x$	$f'(x) = \dfrac{1}{\sqrt{1-x^2}}$	$g(x) = \arcsin[f(x)]$	$g'(x) = \dfrac{f'(x)}{\sqrt{1-f^2(x)}}$
$f(x) = \arccos x$	$f'(x) = -\dfrac{1}{\sqrt{1-x^2}}$	$g(x) = \arccos[f(x)]$	$g'(x) = -\dfrac{f'(x)}{\sqrt{1-f^2(x)}}$
$f(x) = arctgx$	$f'(x) = \dfrac{1}{1+x^2}$	$g(x) = arctg[f(x)]$	$g'(x) = \dfrac{f'(x)}{1+f^2(x)}$
$f(x) = arcctgx$	$f'(x) = -\dfrac{1}{1+x^2}$	$g(x) = arcctg[f(x)]$	$g'(x) = -\dfrac{f'(x)}{1+f^2(x)}$