

<i>Funzione primitiva</i> $f: X \rightarrow f(x)$	<i>Derivata in un punto x_0</i> $f'(x_0)=[Df(x)]_{x=x_0}$	<i>X'= insieme di derivabilità</i>	<i>Funzione derivata</i> $f': X' \rightarrow f'(x)$	<i>sinteticamente</i> $Df(x)=$ in X'
$f: x \in \mathbb{R} \rightarrow f(x)=c$	$f'(x_0)=[Dc]_{x=x_0}=0 \quad \forall x_0 \in \mathbb{R}$	\mathbb{R}	$f': x \in \mathbb{R} \rightarrow f'(x)=0$	$Dc=0$ in \mathbb{R}
$f: x \in \mathbb{R} \rightarrow f(x)=x (+c)$	$f'(x_0)=[Dx]_{x=x_0}=1 \quad \forall x_0 \in \mathbb{R}$	\mathbb{R}	$f': x \in \mathbb{R} \rightarrow f'(x)=1$	$Dx=1$ in \mathbb{R}
$f: x \in \mathbb{R} \rightarrow f(x)=mx+n$	$f'(x_0)=[D(mx+n)]_{x=x_0}=m \quad \forall x_0 \in \mathbb{R}$	\mathbb{R}	$f': x \in \mathbb{R} \rightarrow f'(x)=m$	$D(mx+n)=m$ in \mathbb{R}
$f: x \in \mathbb{R} \rightarrow f(x)=x^n$ $n \in \mathbb{N} - \{1\}$	$f'(x_0)=[Dx^n]_{x=x_0}=nx_0^{n-1} \quad \forall x_0 \in \mathbb{R}$	\mathbb{R}	$f': x \in \mathbb{R} \rightarrow f'(x)=nx_0^{n-1}$	$Dx^n=nx_0^{n-1}$ in \mathbb{R}
$f: x \in \mathbb{R} - \{0\} \rightarrow f(x)=x^{-n} \quad n \in \mathbb{N}$	$f'(x_0)=[Dx^{-n}]_{x=x_0}=-nx_0^{-n-1} \quad \forall x_0 \in \mathbb{R} - \{0\}$	$\mathbb{R} - \{0\}$	$f': x \in \mathbb{R} - \{0\} \rightarrow f'(x)=-nx_0^{-n-1}$	$Dx^{-n}=-nx_0^{-n-1}$ in $\mathbb{R} - \{0\}$
$f: x \in X \rightarrow f(x)=x^\alpha$ $\alpha \in \mathbb{R} - \mathbb{Z}; \alpha \neq 0$ $X=[0, +\alpha[$ se $\alpha > 0$ $X=]0, +\alpha[$ se $\alpha < 0$	$f'(x_0)=[Dx^\alpha]_{x=x_0}=\alpha x_0^{\alpha-1}$ $\forall x_0 \geq 0$ se $\alpha > 1$ $\forall x_0 > 0$ se $\alpha < 1$ $f'(0)=[Dx^\alpha]_{x=0}=+\alpha$ se $0 < \alpha < 1$	$X'=[0, +\alpha[$ se $\alpha > 1$ $X'=]0, +\alpha[$ se $\alpha < 1$	$f': x \in]0, +\alpha[\rightarrow f'(x)=\alpha x_0^{\alpha-1}$ se $\alpha > 1$ $f': x \in]0, +\alpha[\rightarrow f'(x)=\alpha x_0^{\alpha-1}$ se $\alpha < 1$	$Dx^\alpha=\alpha x_0^{\alpha-1}$ in X' $[Dx^\alpha]_{x=0}=+\alpha$ se $0 < \alpha < 1$
$f: x \in X \rightarrow f(x)=\sqrt[n]{x}$ $n \in \mathbb{N}$ $X=\mathbb{R}$ se n dispari $X=[0, +\alpha[$ se n pari	$f'(x_0)=[D\sqrt[n]{x}]_{x=x_0}=\frac{1}{n\sqrt[n]{x_0^{n-1}}}$ $\forall x_0 \in X - \{0\}$ $f'(0)=[D\sqrt[n]{x}]_{x=0}=+\alpha$	$X' = X - \{0\}$	$f': x \in X - \{0\} \rightarrow f'(x)=\frac{1}{n\sqrt[n]{x^{n-1}}}$	$D\sqrt[n]{x}=\frac{1}{n\sqrt[n]{x^{n-1}}}$ in $X - \{0\}$ $[D\sqrt[n]{x}]_{x=0}=+\alpha$
$f: x \in \mathbb{R} \rightarrow f(x)=a^x \quad a > 0 \text{ e } a \neq 1$	$f'(x_0)=[Da^x]_{x=x_0}=a^{x_0} \log a \quad \forall x_0 \in \mathbb{R}$	\mathbb{R}	$f': x \in \mathbb{R} \rightarrow f'(x)=a^x \log a$	$Da^x=a^x \log a$ in \mathbb{R}
$f: x \in \mathbb{R} \rightarrow f(x)=e^x$	$f'(x_0)=[De^x]_{x=x_0}=e^{x_0} \quad \forall x_0 \in \mathbb{R}$	\mathbb{R}	$f': x \in \mathbb{R} \rightarrow f'(x)=e^x$	$De^x=e^x$ in \mathbb{R}
$f: x \in]0, +\alpha[\rightarrow f(x)=\log_a x$ $a > 0 \text{ e } a \neq 1$	$f'(x_0)=[D\log_a x]_{x=x_0}=\frac{1}{x_0 \log a}$ $\forall x_0 \in]0, +\alpha[$	$]0, +\alpha[$	$f': x \in]0, +\alpha[\rightarrow f'(x)=\frac{1}{x \log a} = \frac{\log_a e}{x}$	$D\log_a x=\frac{1}{x \log a}$ in $]0, +\alpha[$
$f: x \in]0, +\alpha[\rightarrow f(x)=\log x$	$f'(x_0)=[D\log x]_{x=x_0}=\frac{1}{x_0}$ $\forall x_0 \in]0, +\alpha[$	$]0, +\alpha[$	$f': x \in]0, +\alpha[\rightarrow f'(x)=\frac{1}{x}$	$D\log x=\frac{1}{x}$ in $]0, +\alpha[$
$f: x \in \mathbb{R} \rightarrow f(x)=\text{sen } x$	$f'(x_0)=[D\text{sen } x]_{x=x_0}=\cos x_0 \quad \forall x_0 \in \mathbb{R}$	\mathbb{R}	$f': x \in \mathbb{R} \rightarrow f'(x)=\cos x$	$D\text{sen } x=\cos x$ in \mathbb{R}
$f: x \in \mathbb{R} \rightarrow f(x)=\cos x$	$f'(x_0)=[D\cos x]_{x=x_0}=-\text{sen } x_0 \quad \forall x_0 \in \mathbb{R}$	\mathbb{R}	$f': x \in \mathbb{R} \rightarrow f'(x)=-\text{sen } x$	$D\cos x=-\text{sen } x$ in \mathbb{R}
$f: x \in X \rightarrow f(x)=\text{tg } x$ $X = \mathbb{R} - \bigcup_{k \in \mathbb{Z}} \left\{ \frac{\pi}{2} + k\pi \right\}$	$f'(x_0)=[D\text{tg } x]_{x=x_0}=\frac{1}{\cos^2 x_0} = 1 + \text{tg}^2 x_0$ $\forall x_0 \in X$	$\mathbb{R} - \bigcup_{k \in \mathbb{Z}} \left\{ \frac{\pi}{2} + k\pi \right\}$	$f': x \in X \rightarrow f'(x)=\frac{1}{\cos^2 x} = 1 + \text{tg}^2 x$	$D\text{tg } x=\frac{1}{\cos^2 x} = 1 + \text{tg}^2 x$ in \mathbb{R}

$f: x \in]-1, 1[\rightarrow f(x) = \arcsen x$	$f'(x_0) = [\text{Darc sen } x]_{x=x_0} = \frac{1}{\sqrt{1-x_0^2}}$ $\forall x_0 \in]-1, 1[$ $f'(-1) = f'(1) = +\infty$	$] -1, 1[$	$f': x \in]-1, 1[\rightarrow f'(x) = \frac{1}{\sqrt{1-x^2}}$	$\text{Darc sen } x = \frac{1}{\sqrt{1-x^2}}$ in $] -1, 1[$ $[\text{Darc sen } x]_{x=-1} = +\infty$ $[\text{Darc sen } x]_{x=1} = +\infty$
$f: x \in]-1, 1[\rightarrow f(x) = \text{arc cos } x$	$f'(x_0) = [\text{Darc cos } x]_{x=x_0} = \frac{-1}{\sqrt{1-x_0^2}}$ $\forall x_0 \in]-1, 1[$ $f'(-1) = f'(1) = -\infty$	$] -1, 1[$	$f': x \in]-1, 1[\rightarrow f'(x) = \frac{-1}{\sqrt{1-x^2}}$	$\text{Darc cos } x = \frac{-1}{\sqrt{1-x^2}}$ in $] -1, 1[$ $[\text{Darc cos } x]_{x=-1} = -\infty$ $[\text{Darc cos } x]_{x=1} = -\infty$
$f: x \in \mathbb{R} \rightarrow f(x) = \text{arctg } x$	$f'(x_0) = [\text{Darc tg } x]_{x=x_0} = \frac{1}{1+x_0^2} \quad \forall x_0 \in \mathbb{R}$	\mathbb{R}	$f': x \in \mathbb{R} \rightarrow f'(x) = \frac{1}{1+x^2}$	$\text{Darc tg } x = \frac{1}{1+x^2}$ in \mathbb{R}