

Funzione	Derivata	Funzione	Derivata
$y = f(x)^n$	$y' = n f(x)^{n-1} \cdot f'(x)$	$y = \text{costante}$	$y' = 0$
$y = \frac{1}{f(x)}$	$y' = -\frac{1}{f(x)^2} \cdot f'(x)$	$y = x$	$y' = 1$
$y = \sqrt{f(x)}$	$y' = \frac{1}{2\sqrt{f(x)}} \cdot f'(x)$	$y = x^n$	$y' = n x^{n-1}$
$y = \text{sen} f(x)$	$y' = \text{cos} f(x) \cdot f'(x)$	$y = \frac{1}{x}$	$y' = -\frac{1}{x^2}$
$y = \text{cos} f(x)$	$y' = -\text{sen} f(x) \cdot f'(x)$	$y = \sqrt{x}$	$y' = \frac{1}{2\sqrt{x}}$
$y = \text{tan} f(x)$	$y' = \frac{1}{\text{cos}^2 f(x)} \cdot f'(x) = 1 + \text{tan}^2 f(x) \cdot f'(x)$	$y = \sqrt[n]{x^m}$	$y' = \frac{m}{n \sqrt[n]{x^{n-m}}}$
$y = \text{ctg} f(x)$	$y' = -\frac{1}{\text{sen}^2 f(x)} \cdot f'(x)$	$y = \text{sen} x$	$y' = \text{cos} x$
$y = e^{f(x)}$	$y' = e^{f(x)} \cdot f'(x)$	$y = \text{cos} x$	$y' = -\text{sen} x$
$y = a^{f(x)}$	$y' = a^{f(x)} \ln a \cdot f'(x)$	$y = \text{tan} x$	$y' = \frac{1}{\text{cos}^2 x} = 1 + \text{tan}^2 x$
$y = \ln f(x)$	$y' = \frac{1}{f(x)} \cdot f'(x)$	$y = \text{ctg} x$	$y' = -\frac{1}{\text{sen}^2 x}$
$y = \log_a f(x)$	$y' = \frac{1}{f(x) \cdot \ln a} \cdot f'(x) = \frac{\log_a e}{f(x)} \cdot f'(x)$	$y = e^x$	$y' = e^x$
$y = \text{arcsin} f(x)$	$y' = \frac{1}{\sqrt{1-f(x)^2}} \cdot f'(x)$	$y = a^x$	$y' = a^x \ln a$
$y = \text{arccos} f(x)$	$y' = -\frac{1}{\sqrt{1-f(x)^2}} \cdot f'(x)$	$y = \ln x$	$y' = \frac{1}{x}$
$y = \text{arctg} f(x)$	$y' = \frac{1}{1+f(x)^2} \cdot f'(x)$	$y = \log_a x$	$y' = \frac{1}{x \cdot \ln a} = \frac{\log_a e}{x}$
$y = \text{arcctg} f(x)$	$y' = -\frac{1}{1+f(x)^2} \cdot f'(x)$	$y = x^x$	$y' = x^x (1 + \ln x)$
		$y = \text{arcsin} x$	$y' = \frac{1}{\sqrt{1-x^2}}$
		$y = \text{arccos} x$	$y' = -\frac{1}{\sqrt{1-x^2}}$
		$y = \text{arctg} x$	$y' = \frac{1}{1+x^2}$
		$y = \text{arcctg} x$	$y' = -\frac{1}{1+x^2}$

## REGOLE DI DERIVAZIONE

Regola della somma (linearità)  $D[\alpha f(x) + \beta g(x)] = \alpha f'(x) + \beta g'(x)$

Regola del prodotto (o di Leibniz)  $D[f(x) \cdot g(x)] = f'(x) \cdot g(x) + f(x) \cdot g'(x)$

Regola del quoziente  $D\left[\frac{f(x)}{g(x)}\right] = \frac{f'(x) \cdot g(x) - f(x) \cdot g'(x)}{(g(x))^2}$

Regola della funzione reciproca  $D\left[\frac{1}{f(x)}\right] = -\frac{f'(x)}{f(x)^2}$

Regola della catena o delle funzioni composte  $D[f(g(x))] = f'(g(x)) \cdot g'(x)$