FORMULE DI DERIVAZIONE (Indicheremo la derivata di una funzione con $Df(x)$ o $f'(x)$)

$$Dk = 0$$
$$Dx = 1$$
$$Dkx = k$$
$$Dx^n = n \cdot x^{n-1}$$
$$Dkx^n = nkx^{n-1}$$
$$De^x = e^x$$
$$Da^x = a^x \cdot \ln a$$
$$D\,\mathrm{sen}\,x = \cos x$$
$$D\cos x = -\mathrm{sen}\,x$$
$$D\frac{1}{x} = -\frac{1}{x^2}$$
$$D\sqrt{x} = \frac{1}{2\sqrt{x}}$$
$$D\sqrt[n]{x} = \frac{1}{n\sqrt[n]{x^{n-1}}}$$
$$D\ln(x) = \frac{1}{x}$$
$$D\log_a(x) = \frac{1}{x} \cdot \log_a e$$
$$Dtgx = (1 + tg^2 x) \;\; o \;\; \left(\frac{1}{\cos^2 x}\right)$$
$$Dctgx = (-1 - ctg^2 x) \;\; o \;\; \left(\frac{-1}{\mathrm{sen}^2 x}\right)$$
$$D\arcsen x = \frac{1}{\sqrt{1-x^2}}$$
$$D\arccos x = \frac{-1}{\sqrt{1-x^2}}$$
$$D\,\mathrm{arctg}\,x = \frac{1}{1+x^2}$$
$$D\,\mathrm{sen}[f(x)] = f'(x) \cdot \cos f(x)$$
$$D\cos[f(x)] = -f'(x) \cdot \mathrm{sen}\, f(x)$$
$$Dtg[f(x)] = (1 + tg^2[f(x)]) \cdot f'(x)$$
$$Dtg[f(x)] = \frac{f'(x)}{\cos^2[f(x)]}$$

$$D\,\mathrm{arcsen}[f(x)] = \frac{f'(x)}{\sqrt{1-f^2(x)}}$$
$$D\arccos[f(x)] = \frac{-f'(x)}{\sqrt{1-f^2(x)}}$$
$$D\,\mathrm{arctg}[f(x)] = \frac{f'(x)}{1+f^2(x)}$$
$$D\,\mathrm{sen}^n[f(x)] = n \cdot f'(x)\,\mathrm{sen}^{n-1}[f(x)]\cos f(x)$$
$$D\cos^n[f(x)] = -n \cdot f'(x)\cos^{n-1}[f(x)]\,\mathrm{sen}\, f(x)$$
$$Dtg^n[f(x)] = n \cdot f'(x) tg^{n-1}[f(x)] \cdot (1 + tg^2[f(x)]$$
$$D\,\mathrm{senh}(x) = \cosh(x)$$
$$D\cosh(x) = \mathrm{senh}(x)$$
$$D\,\mathrm{sen}\left(x^n\right) = nx^{n-1}\cos(x^n)$$
$$D\cos\left(x^n\right) = -nx^{n-1}\,\mathrm{sen}(x^n)$$
$$Dtgh(x) = \frac{1}{\cos^2 h(x)}$$
$$Df(x)^n = n \cdot f(x)^{n-1} \cdot f'(x)$$
$$Dk \cdot f(x) = k \cdot f'(x)$$
$$D\sqrt{f(x)} = \frac{f'(x)}{2\sqrt{f(x)}}$$
$$D\sqrt[n]{f(x)} = \frac{f'(x)}{n \cdot \sqrt[n]{f(x)^{n-1}}}$$
$$D\ln[f(x)] = \frac{f'(x)}{f(x)}$$
$$D\log_a[f(x)] = \frac{f'(x)}{f(x)} \cdot \log_a e$$
$$De^{f(x)} = f'(x) \cdot e^{f(x)}$$
$$Da^{f(x)} = f'(x) \cdot a^{f(x)} \cdot \ln a$$
$$D[f(x) \pm g(x)] = f'(x) \pm g'(x)$$
$$D[f(x) \cdot g(x)] = f'(x)g(x) + f(x)g'(x)$$
$$D\left[\frac{f(x)}{g(x)}\right] = \frac{f'(x)g(x) - f(x)g'(x)}{g^2(x)}$$
$$Df(x)^{g(x)} = f(x)^{g(x)} \cdot (g'(x) \cdot \ln[f(x)] + g(x) \cdot \frac{f'(x)}{f(x)})$$