Elemi deriváltak és deriválási szabályok – frissített tartalommal

$(c)' = 0$

$(x^n)' = n \cdot x^{n-1}$

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

$(\sqrt{x})' = \frac{1}{2\sqrt{x}}$

$(\log_a x)' = \frac{1}{x} \cdot \log_a e$

$(\ln x)' = \frac{1}{x}$

$(\sin x)' = \cos x$

$(\cos x)' = -\sin x$

$(tgx)' = \frac{1}{\cos^2 x}$

$(ctgx)' = -\frac{1}{\sin^2 x}$

$(e^x)' = e^x$

$(a^x)' = a^x \cdot \ln a$

$(shx)' = chx$

$(chx)' = shx$

$(thx)' = \frac{1}{ch^2 x}$

$(cthx)' = -\frac{1}{sh^2 x}$

$$\left(f(x)\right)' = \frac{df}{dx}$$

$\{f[g(x)]\}' = \frac{df}{dg} \cdot \frac{dg}{dx}$

$(c \cdot f)' = c \cdot f'$

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

$(f \cdot g)' = f' \cdot g + f \cdot g'$

$\left(\frac{f}{g}\right)' = \frac{f' \cdot g - f \cdot g'}{g^2}$

$(f(g_x))' = f'_g \cdot g'_x$

$(\arcsin x)' = \frac{1}{\sqrt{1-x^2}}$

$(\arccos x)' = -\frac{1}{\sqrt{1-x^2}}$

$(arctgx)' = \frac{1}{1+x^2}$

$(arcctgx)' = -\frac{1}{1+x^2}$

$(ar\, shx)' = \frac{1}{\sqrt{x^2+1}}$

$(ar\, chx)' = \pm\frac{1}{\sqrt{x^2-1}}$

$(ar\, thx)' = \frac{1}{1-x^2}$

$(ar\, cthx)' = \frac{1}{1-x^2}$

Logaritmikus deriválás:

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

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

Összeállította: Tamás Ferenc, 2016
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Trigonometrikus ötletek

$sin^2x + cos^2x = 1$

$\sin(x \pm y) = sinx \cdot cosy \pm cosx \cdot siny$

$\cos(x \pm y) = cosx \cdot cosy \mp sinx \cdot siny$

$tg(x \pm y) = \dfrac{tgx \pm tgy}{1 - tgx \cdot tgy}$; $\sin 2x = 2 \cdot sinx \cdot \cos x$

$\cos 2x = cos^2x - sin^2x$; $tg\ 2x = \dfrac{2 \cdot tgx}{1 - tg^2x}$

$sin^2x = \frac{1-\cos 2x}{2}$; $cos^2x = \frac{1+\cos 2x}{2}$

$sinx + siny = 2 \cdot sin\dfrac{x+y}{2} \cdot cos\dfrac{x-y}{2}$

$cosx + cosy = 2 \cdot cos\dfrac{x+y}{2} \cdot cos\dfrac{x-y}{2}$

$sh\ x = \frac{e^x - e^{-x}}{2}$; $ch\ x = \frac{e^x + e^{-x}}{2}$

$sh\ 2x = 2 \cdot shx \cdot chx$; $ch\ 2x = ch^2x + sh^2x$

$ch^2x - sh^2x = 1$

$ch^2x = \dfrac{ch\ 2x + 1}{2}$; $sh^2x = \dfrac{ch\ 2x - 1}{2}$

$\sin 30° = \cos 60° = \frac{1}{2}$; $\sin 0° = \cos 90° = 0$

$\cos 30° = \sin 60° = \frac{\sqrt{3}}{2}$; $\sin 90° = \cos 0° = 1$

$\sin 45° = \cos 45° = \dfrac{\sqrt{2}}{2}$

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