DERIVACE

$y = konst$	$y' = 0$
$y = x$	$y' = 1$
$y = \sqrt{x}$	$y' = \dfrac{1}{2\sqrt{x}}$
$y = x^k$	$y' = kx^{k-1}$
$y = e^x$	$y' = e^x$
$y = a^x$	$y' = a^x \ln a$
$y = \ln x$	$y' = \dfrac{1}{x}$
$y = \log_a x$	$y' = \dfrac{1}{x \ln a}$
$y = \sin x$	$y' = \cos x$
$y = \cos x$	$y' = -\sin x$
$y = tgx$	$y' = \dfrac{1}{\cos^2 x}$
$y = \cot gx$	$y' = -\dfrac{1}{\sin^2 x}$
$y = \arcsin x$	$y' = \dfrac{1}{\sqrt{1-x^2}}$
$y = \arccos x$	$y' = -\dfrac{1}{\sqrt{1-x^2}}$
$y = arctgx$	$y' = \dfrac{1}{1+x^2}$
$y = arc\cot gx$	$y' = -\dfrac{1}{1+x^2}$

PRAVIDLA:

$$[f \pm g]' = f' \pm g'$$

$$[f \cdot g]' = f' \cdot g + f \cdot g'$$

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

$$[f(g)]' = f'(g) \cdot g'$$

$$\left[f^g\right]' = \left[e^{g \cdot \ln f}\right]' = e^{g \ln f} \cdot \left[g' \cdot \ln f + g \cdot \frac{f'}{f}\right]$$

L´HOSPITALOVO PRAVIDLO:

$$\lim \frac{f(x)}{g(x)} = \left[\frac{0}{0}\right] = \lim \frac{f'(x)}{g'(x)} \qquad \lim \frac{f(x)}{g(x)} = \left[\frac{\pm\infty}{\pm\infty}\right] = \lim \frac{f'(x)}{g'(x)}$$

ROVNICE TEČNY v bodě T[x_0,y_0]:

$$y = f'(x_o) \cdot (x - x_o) + y_0$$

ROVNICE NORMÁLY:

$$y = -\frac{1}{f'(x_o)} \cdot (x - x_o) + y_0$$