Derivace elementárních funkcí (základní vzorce)

1. $(e^x)' = e^x;\ x \in \mathbb{R},$
2. $(a^x)' = a^x \ln a,\ a > 0,\ a \neq 1,\ x \in \mathbb{R},$
3. $(\ln x)' = \frac{1}{x};\ x \in (0, +\infty),$
4. $(\log_a x)' = \frac{1}{x \ln a},\ a > 0,\ a \neq 1,\ x \in (0, +\infty),$
5. $(x^\alpha)' = \alpha . x^{\alpha - 1},\ x \in (0, +\infty),\ \alpha \in \mathbb{R},$
6. $(\sin x)' = \cos x,\ x \in \mathbb{R},$
7. $(\cos x)' = -\sin x,\ x \in \mathbb{R},$
8. $(\operatorname{tg} x)' = \frac{1}{\cos^2 x};\ x \neq (2k+1)\frac{\pi}{2}$, k celé,
9. $(\operatorname{cotg} x)' = \frac{-1}{\sin^2 x};\ x \neq k\pi$, k celé.
10. $(\arcsin x)' = \frac{1}{\sqrt{1 - x^2}},\ x \in (-1, 1),$
11. $(\arccos x)' = -\frac{1}{\sqrt{1 - x^2}};\ x \in (-1, 1),$
12. $(\operatorname{arctg} x)' = \frac{1}{1 + x^2};\ x \in \mathbb{R},$
13. $(\operatorname{arccotg} x)' = -\frac{1}{1 + x^2},\ x \in \mathbb{R},$
14. $(\sinh x)' = \cosh x,\ x \in \mathbb{R}\ ; \quad \sinh x = \frac{e^x - e^{-x}}{2}\ ,$
15. $(\cosh x)' = \sinh x,\ x \in \mathbb{R}\ ; \quad \cosh x = \frac{e^x + e^{-x}}{2}\ ,$
16. $(\operatorname{tgh} x)' = \frac{1}{\cosh^2 x},\ x \in \mathbb{R}\ ; \quad \operatorname{tgh} x = \frac{\sinh x}{\cosh x}\ ,$
17. $(\operatorname{cotgh} x)' = \frac{-1}{\sinh^2 x},\ x \neq 0\ ; \quad \operatorname{cotgh} x = \frac{\cosh x}{\sinh x}\ ,$
18. $(\operatorname{argsinh} x)' = \frac{1}{\sqrt{x^2 + 1}},\ x \in \mathbb{R},$
19. $(\operatorname{argcosh} x)' = \frac{1}{\sqrt{x^2 - 1}},\ x \in (1, +\infty),$
20. $(\operatorname{argtgh} x)' = \frac{1}{1 - x^2},\ x \in (-1, 1),$
21. $(\operatorname{argcotgh} x)' = \frac{1}{1 - x^2},\ x \in (-\infty, -1) \cup (1, +\infty).$