

| funkce $f$  | graf (s prostou restrikcí)                  | vzorce  | $f' \int f$   | inverze $f_{-1}$   | graf $f_{-1}$                                   | $f_{-1}'$   |
|---|---|---|---|--|---|---|
| $\sin(x)$<br>$= \frac{e^{ix} - e^{-ix}}{2i}$  |   | $\sin(x+y) = \sin(x)\cos(y) + \cos(x)\sin(y)$<br>$\sin(2x) = 2\sin(x)\cos(x)$ $\sin^2(x) = \frac{1 - \cos(2x)}{2}$  | $\cos(x)$<br>$\int f dx = -\cos(x)$   | <b>arcsin(x)</b><br>$D(f_{-1}) = \langle -1, 1 \rangle$  |   | $\frac{1}{\sqrt{1-x^2}}$<br>$D(f_{-1}') = (-1, 1)$        |
| <b>lichá, <math>T=2\pi</math></b><br>$\sin(0) = \frac{\sqrt{0}}{2} = 0$ $\sin(\frac{\pi}{6}) = \frac{\sqrt{1}}{2} = \frac{1}{2}$ $\sin(\frac{\pi}{4}) = \frac{\sqrt{2}}{2}$ $\sin(\frac{\pi}{3}) = \frac{\sqrt{3}}{2}$ $\sin(\frac{\pi}{2}) = \frac{\sqrt{4}}{2} = 1$ $\sin^2(x) + \cos^2(x) = 1$ | $\cos(x)$<br>$= \frac{e^{ix} + e^{-ix}}{2}$ | $\cos(x+y) = \cos(x)\cos(y) - \sin(x)\sin(y)$<br>$\cos(2x) = \cos^2(x) - \sin^2(x)$ $\cos^2(x) = \frac{1 + \cos(2x)}{2}$  | $-\sin(x)$<br>$\int f dx = \sin(x)$   | <b>arccos(x)</b><br>$D(f_{-1}) = \langle -1, 1 \rangle$  |   | $\frac{-1}{\sqrt{1-x^2}}$<br>$D(f_{-1}') = (-1, 1)$       |
| <b>sudá, <math>T=2\pi</math></b>  |   | $\cos(x+y) = \cos(x)\cos(y) - \sin(x)\sin(y)$<br>$\cos(2x) = \cos^2(x) - \sin^2(x)$ $\cos^2(x) = \frac{1 + \cos(2x)}{2}$  | $\frac{1}{\cos^2(x)}$<br>$\int f dx = -\ln \cos(x) $  | <b>arctg(x)</b><br>$D(f_{-1}) = \mathbb{R}$  |   | $\frac{1}{x^2+1}$<br>$D(f_{-1}') = \mathbb{R}$            |
| $\text{tg}(x)$<br>$= \frac{\sin(x)}{\cos(x)}$   |   | $\text{tg}(x+y) = \frac{\text{tg}(x) + \text{tg}(y)}{1 - \text{tg}(x)\text{tg}(y)}$<br>$\text{tg}(2x) = \frac{2\text{tg}(x)}{1 - \text{tg}^2(x)}$                         | $\frac{-1}{\sin^2(x)}$<br><b>arccotg(x)</b><br>$D(f_{-1}) = \mathbb{R}$   |  | $\frac{-1}{x^2+1}$<br>$D(f_{-1}') = \mathbb{R}$ |   |
| <b>lichá, <math>T=\pi</math></b>  |   | $\text{cotg}(x+y) = \frac{\text{cotg}(x)\text{cotg}(y) - 1}{\text{cotg}(x) + \text{cotg}(y)}$<br>$\text{cotg}(2x) = \frac{\text{cotg}^2(x) - 1}{2\text{cotg}(x)}$         | $\frac{-1}{\sin^2(x)}$<br><b>arccotg(x)</b><br>$D(f_{-1}) = \mathbb{R}$   |  | $\frac{-1}{x^2+1}$<br>$D(f_{-1}') = \mathbb{R}$ |   |
| <b>lichá, <math>T=\pi</math></b>  |   | $\sinh(x+y) = \sinh(x)\cosh(y) + \cosh(x)\sinh(y)$<br>$\sinh(2x) = 2\sinh(x)\cosh(x)$<br>$\sinh^2(x) = \frac{\cosh(2x) - 1}{2}$   | $\cosh(x)$<br>$\int f dx = \sinh(x)$  | <b>argsinh(x)</b><br>$= \ln(x + \sqrt{x^2+1})$<br>$D(f_{-1}) = \mathbb{R}$                                 |   | $\frac{1}{\sqrt{x^2+1}}$<br>$D(f_{-1}') = \mathbb{R}$     |
| <b>lichá</b><br>$D(f) = \mathbb{R}$   |   | $\cosh^2(x) - \sinh^2(x) = 1$<br>$\cosh(x+y) = \cosh(x)\cosh(y) + \sinh(x)\sinh(y)$<br>$\cosh(2x) = \cosh^2(x) + \sinh^2(x)$<br>$\cosh^2(x) = \frac{\cosh(2x) + 1}{2}$    | $\sinh(x)$<br>$\int f dx = \cosh(x)$  | <b>argcosh(x)</b><br>$= \ln(x + \sqrt{x^2-1})$<br>$D(f_{-1}) = \langle 1, \infty \rangle$                  |   | $\frac{1}{\sqrt{x^2-1}}$<br>$D(f_{-1}') = (1, \infty)$    |
| <b>sudá</b><br>$D(f) = \mathbb{R}$  |   | $\text{tgh}(x+y) = \frac{\text{tgh}(x) + \text{tgh}(y)}{1 + \text{tgh}(x)\text{tgh}(y)}$<br>$\text{tgh}(2x) = \frac{2\text{tgh}(x)}{1 + \text{tgh}^2(x)}$                 | $\frac{1}{\cosh^2(x)}$<br>$\int f dx = \text{ln} \cosh(x) $   | <b>argtgh(x)</b><br>$= \frac{1}{2} \ln\left(\frac{1+x}{1-x}\right)$<br>$D(f_{-1}) = \langle -1, 1 \rangle$ |   | $\frac{1}{1-x^2}$<br>$D(f_{-1}') = \langle -1, 1 \rangle$ |
| <b>lichá</b><br>$D(f) = \mathbb{R}$   |   | $\text{cotgh}(x+y) = \frac{1 + \text{cotgh}(x)\text{cotgh}(y)}{\text{cotgh}(x) + \text{cotgh}(y)}$<br>$\text{cotgh}(2x) = \frac{1 + \text{cotgh}^2(x)}{2\text{cotgh}(x)}$ | $\frac{-1}{\sinh^2(x)}$<br><b>argcotgh(x)</b><br>$= \frac{1}{2} \ln\left(\frac{x+1}{x-1}\right)$<br>$D(f_{-1}) =  x  > 1$ |  | $\frac{1}{1-x^2}$<br>$D(f_{-1}') =  x  > 1$     |   |
| <b>lichá</b><br>$D(f) = \mathbb{R}$   |   | $\text{cotgh}(x+y) = \frac{1 + \text{cotgh}(x)\text{cotgh}(y)}{\text{cotgh}(x) + \text{cotgh}(y)}$<br>$\text{cotgh}(2x) = \frac{1 + \text{cotgh}^2(x)}{2\text{cotgh}(x)}$ | $\frac{-1}{\sinh^2(x)}$<br><b>argcotgh(x)</b><br>$= \frac{1}{2} \ln\left(\frac{x+1}{x-1}\right)$<br>$D(f_{-1}) =  x  > 1$ |  | $\frac{1}{1-x^2}$<br>$D(f_{-1}') =  x  > 1$     |   |
| <b>lichá</b><br>$D(f) = \mathbb{R}$   |   | $\text{cotgh}(x+y) = \frac{1 + \text{cotgh}(x)\text{cotgh}(y)}{\text{cotgh}(x) + \text{cotgh}(y)}$<br>$\text{cotgh}(2x) = \frac{1 + \text{cotgh}^2(x)}{2\text{cotgh}(x)}$ | $\frac{-1}{\sinh^2(x)}$<br><b>argcotgh(x)</b><br>$= \frac{1}{2} \ln\left(\frac{x+1}{x-1}\right)$<br>$D(f_{-1}) =  x  > 1$ |  | $\frac{1}{1-x^2}$<br>$D(f_{-1}') =  x  > 1$     |   |