

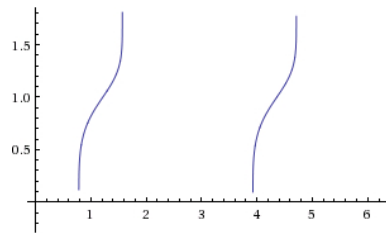
1.

$$f : \sqrt[4]{\ln(\operatorname{tg} x)}$$

$$\operatorname{tg} : x \neq \frac{\pi}{2} + k\pi, k \in \mathbb{Z}$$

$$\ln : \operatorname{tg} x > 0 \Rightarrow x \in \left(k\pi, \frac{\pi}{2} + k\pi\right)$$

$$\sqrt[4]{\phantom{x}} : \ln \geq 0 \Rightarrow \operatorname{tg} x \geq 1 \Rightarrow D(f) = \left\langle \frac{\pi}{4} + k\pi, \frac{\pi}{2} + k\pi \right\rangle$$



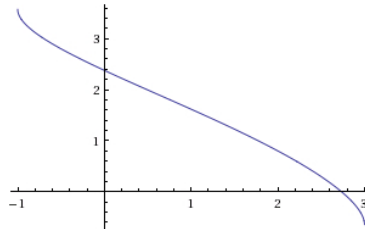
2.

$$f : y = \sqrt{3-x} + \arcsin \frac{3-2x}{5}$$

$$\sqrt{\phantom{x}} : 3-x \geq 0 \Rightarrow x \leq 3$$

$$\arcsin : \frac{3-2x}{5} \in \langle -1, 1 \rangle \Rightarrow (3-2x) \in \langle -5, 5 \rangle \Rightarrow -2x \in \langle -8, 2 \rangle \Rightarrow x \in \langle -1, 4 \rangle$$

$$\Rightarrow D(f) = \langle -1, 3 \rangle$$



3.

$$f : y = 3 + 4 \arccos(2x - 1)$$

$$(2x - 1) \in \langle -1, 1 \rangle \Rightarrow 2x \in \langle 0, 2 \rangle \Rightarrow D(f) = \langle 0, 1 \rangle$$

$$H(f) = 3 + 4 \cdot \left\langle -\frac{\pi}{2}, \frac{\pi}{2} \right\rangle = \langle 3 - 2\pi, 3 + 2\pi \rangle = D(f^{-1})$$

$$x = 3 + 4 \arccos(2y - 1)$$

$$\frac{x-3}{4} = \arccos(2y-1)$$

$$\cos \frac{x-3}{4} = (2y-1)$$

$$f^{-1} : y = \frac{1}{2} \cdot \left[ \cos \frac{x-3}{4} + 1 \right]$$

4.

$$f : y = \sqrt{3 - e^x}$$

$$3 - e^x \geq 0 \Rightarrow e^x \leq 3 \Rightarrow D(f) = (-\infty, \ln 3)$$

$$x = \sqrt{3 - e^y}$$

$$x^2 = 3 - e^y$$

$$e^y = 3 - x^2$$

$$f^{-1} : y = \ln(3 - x^2)$$

$$3 - x^2 > 0 \Rightarrow D(f^{-1}) = (-\sqrt{3}, \sqrt{3})$$

5.

$$f : y = x^2, D(f) = \mathbb{R}_0^-$$

$$H(f) = \mathbb{R}_0^+ = D(f^{-1})$$

$$f^{-1} : y = -\sqrt{x}$$

Poznámka autora: Grafy požadovaných funkcí dodám v nejbližší době, momentálně nemám po ruce na jejich vytvoření vhodný program.