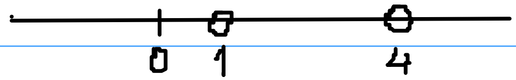
Pr 1. $f(x)=\frac{1}{x^2-5x+4}$ $D_f = ?$ $f(0)=\frac{1}{4}$ $f(2)=-\frac{1}{2}$

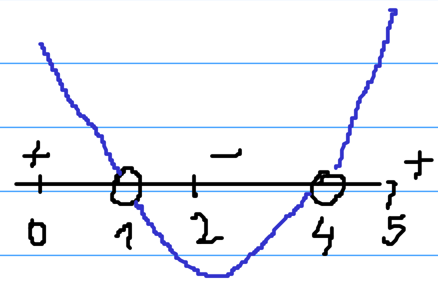
$x^2-5x+4=0$ $x_1=1$ $x_2=4$

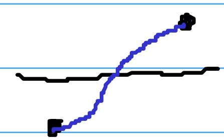
$(x-1)(x-4)=0$ $D_f=R-\{1,4\}$



Pr 2. $f(x)=\frac{x-2}{x^2-5x+4}$ $D_f=R-\{1,4\}$

Pr 3 $f(x)=\ln\frac{1}{x^2-5x+4}$

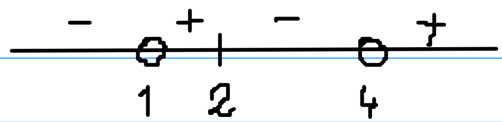




$D_f=(-\infty,1)\cup(4,\infty)$

Pr 4

$f(x)=\ln\frac{x-2}{x^2-5x+4}$



$g(x)=\frac{x-2}{x^2-5x+4}$ $g(0)=-\frac{2}{4}<0$ $g\left(\frac{3}{2}\right)=\frac{-\frac{1}{2}}{-\frac{5}{4}}=\frac{2}{5}>0$

$D_f=(1,2\rangle\cup(4,\infty)$

Pr 5. $f(x) = e^{\frac{1}{x}}$ $\quad D_f = \mathbb{R} - \{0\}$ $\quad H_f = \mathbb{R}^+ - \{1\}$

$f(-1) = e^{-1} = \frac{1}{e}$

$f(\frac{1}{3}) = e^{3}$ $\quad x = ?$ $\quad \frac{1}{x} = 0$

$f^{-1}(y) = ?$ $\quad y = e^{\frac{1}{x}} \quad | \ln$ $\quad f^{-1}(y) = \frac{1}{\ln y}$

$\ln y = \ln e^{\frac{1}{x}} = \frac{1}{x}$

$y > 0 \quad \ln y \neq 0$

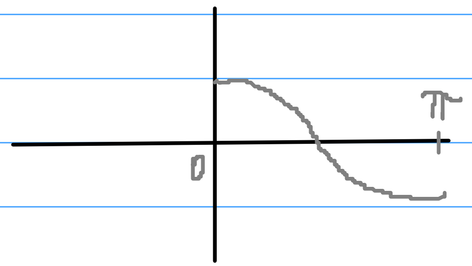
$\frac{1}{\ln y} = x$

$y \neq 1$

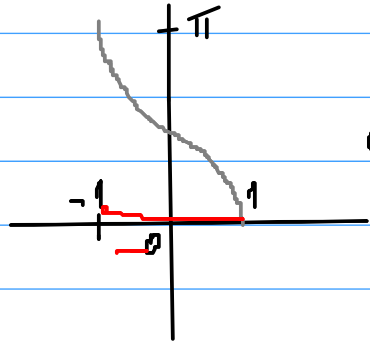
$D_{f^{-1}} = H_f = \mathbb{R}^+ - \{1\}$

Pr 6. $f(x) = \arccos \frac{1}{x}$

$D_f = ?$



$\cos : \langle 0, \pi \rangle \to \langle -1, 1 \rangle$



arccos

$H_{\arccos} = \langle 0, \pi \rangle$

$1<x$ $\qquad 0<\frac{1}{x}<1$

$x<-1$ $\qquad -1<\frac{1}{x}<0$ $\qquad D_f=(-\infty,-1)\cup(1,\infty)$

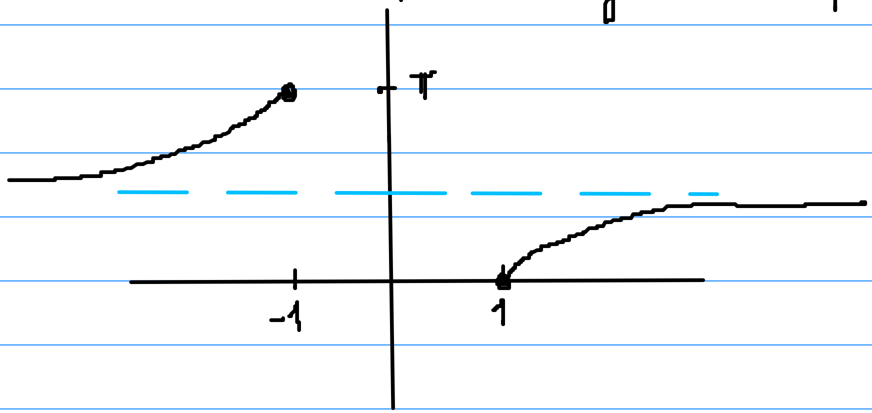
$H_f\subseteq\langle 0,\pi\rangle$ $\qquad H_f=\langle 0,\frac{\pi}{2})\cup(\frac{\pi}{2},\pi\rangle$

$f^{-1}(y)$ $\qquad y=\arccos\frac{1}{x}$

$\cos y=\cos\left(\arccos\frac{1}{x}\right)=\frac{1}{x}$ $\qquad y\in\langle 0,\pi\rangle$ $\qquad$ inv. f !

$x=\frac{1}{\cos y}$ $\qquad y\neq\frac{\pi}{2}+k\pi$

$f^{-1}(y)=\frac{1}{\cos y}$ $\qquad D_{f^{-1}}=H_f$ $\qquad$ Graf $f(x)$



$$\lim_{x\to\infty}\arccos\frac{1}{x}=\frac{\pi}{2}$$

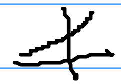
$$\lim_{x\to-\infty}\arccos\frac{1}{x}=\frac{\pi}{2}$$

Pr 7 $\quad f(x)=\sqrt{1-\ln(x-1)}$ $\quad D_f=(1, e+1\rangle$ $\quad H_f=R_0^+$

$x\neq 1 \quad 1<x \Rightarrow x-1>0 \quad \ln(x-1)$ je def.

$$1-\ln(x-1)\geq 0$$

$$1 \geq \ln(x-1) \quad |\ \exp.$$



$$e \geq e^{\ln(x-1)} = x-1$$

$$e+1 \geq x$$

$$y=\sqrt{1-\ln(x-1)} \quad |^2 \qquad y\geq 0$$

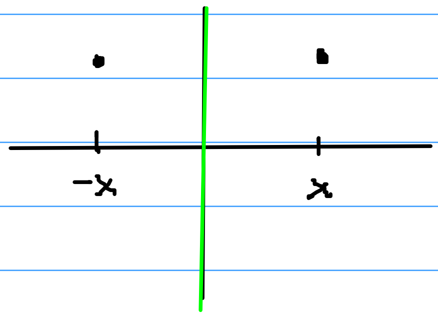
$$y^2 = 1-\ln(x-1) \quad |-1 \quad |\cdot(-1)$$

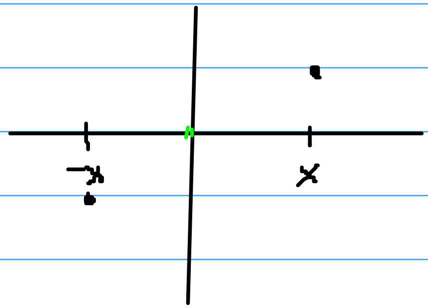
$$1-y^2=\ln(x-1) \quad \exp$$

$$e^{(1-y^2)} = x-1$$

$$x = 1+e^{1-y^2} \qquad f^{-1}(y)=1+e^{(1-y^2)} \qquad D_{f^{-1}}=R_0^+$$

Párna a nepárna funkcia.

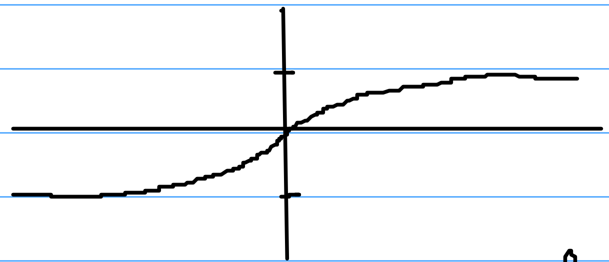




$f(-x) = f(x)$

$f(-x) = -f(x)$

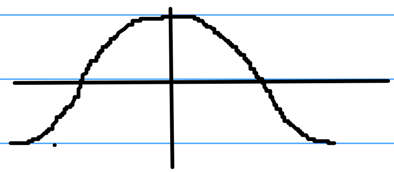
1. $f(x) = \operatorname{arctg}(x^3)$ NEP $f(-x) = \operatorname{arctg}(-x)^3 = \operatorname{arctg}(-(x)^3) = -\operatorname{arctg} x^3 = -f(x)$



$H_{arctg} = \left(-\frac{\pi}{2}, \frac{\pi}{2}\right)$

2 $f(x) = \operatorname{arctg}(x^2+1)$ PÁRNA $f(-x) = \operatorname{arctg}((-x)^2+1) = f(x)$

3 $f(x) = \cos(x^3)$ PÁRNA $f(-x) = \cos((-x)^3) = \cos(-x^3) = \cos(x^3) = f(x)$



4. $f(x) = \cos(x^2+1)$ PÁR $f(-x) = \cos((-x)^2+1) = \cos(x^2+1) = f(x)$

5 $f(x) = e^{x^3}$ Ani P – ani NEP $\Leftarrow$ $f(1) = e$ $f(-1) = e^{-1} = \frac{1}{e}$

6 $f(x) = e^{(x^2+1)}$ Párna