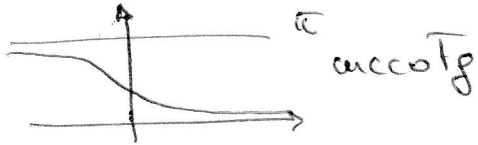


$$f(x) = \operatorname{arccotg}\left(\frac{1}{\sqrt{x}}\right)$$

• ? $D_f : \begin{cases} \sqrt{x} \neq 0 \Leftrightarrow x > 0 \\ x > 0 \end{cases}$

$$D_f =]0, +\infty[$$

• intersez. con gli assi: $f(x) = 0 \Leftrightarrow \operatorname{arccotg} \frac{1}{\sqrt{x}} = 0$ mai.



• segno di f : $\operatorname{arccotg} \frac{1}{\sqrt{x}} > 0 \quad \forall x \in D_f$

• lim. significativi: $\lim_{x \rightarrow 0} f(x) = \lim_{y \rightarrow +\infty} \operatorname{arccotg} y = 0$

$\lim_{x \rightarrow +\infty} f(x) = \operatorname{arccotg}(0) = \pi/2 \Rightarrow y = \pi/2$ as. orizz. dx

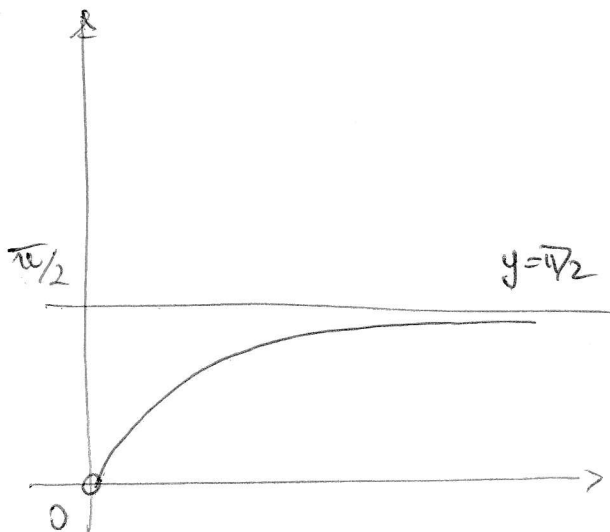
• $f'(x) = -\frac{1}{1 + \frac{1}{x}} \cdot \left(-\frac{1}{x}\right) \frac{1}{2\sqrt{x}} = \frac{1}{2\sqrt{x}(x+1)} \quad \forall x \in]0, +\infty[$

$f'(x) > 0 \Leftrightarrow 2\sqrt{x}(x+1) > 0 \Leftrightarrow x+1 > 0 \Leftrightarrow x > -1 \quad \forall x \in D_f$
 $\Rightarrow f$ str. crescente

• $f''(x) = -\frac{1}{4x(x+1)^2} \left[\frac{(x+1)}{\sqrt{x}} + 2\sqrt{x} \right] = -\frac{1+3x}{4x\sqrt{x}(x+1)^2}$

$f''(x) > 0 \Leftrightarrow 1+3x \leq 0 \Leftrightarrow x \leq -\frac{1}{3}$ (mai in D_f)

$\Rightarrow f$ str. concave



f è iniettiva, $\inf(f) = 0$,
 $\sup(f) = \pi/2$

$$\operatorname{cod}(f) =]0, \pi/2[$$

non ci sono punti di minimo né di massimo rel (quindi neanche assol)