4/11/2021

Determina per quali valori reali di x sono definiti i seguenti radicali.

80 $\sqrt{x-1}$ $[x \geq 1]$

$x - 1 \geq 0 \Rightarrow x \geq 1$

$\sqrt[n]{a}$ è definito $\begin{cases} \text{se } n \text{ PARI} & a \geq 0 \\ \text{se } n \text{ DISPARI} & a \text{ qualsiasi} \end{cases}$

pur che sia in sé definito

- $\sqrt[3]{x-1}$ è definita $\forall x \in \mathbb{R}$
- $\sqrt[3]{\frac{x-1}{x+2}}$ è definita $\forall x \neq -2$

89 $\sqrt{\frac{1}{2} - \frac{x-1}{3}}$ (INDICE PARI)

$\frac{1}{2} - \frac{x-1}{3} \geq 0 \quad \frac{3-2(x-1)}{6} \geq 0 \quad 3 - 2x + 2 \geq 0$

$-2x \geq -5 \quad x \leq \frac{5}{2}$

85 $\sqrt[7]{x^2-1}$ $\forall x \in \mathbb{R}$

86 $\sqrt[4]{5-2x}$ $5 - 2x \geq 0 \quad -2x \geq -5 \quad x \leq \frac{5}{2}$

87 $\sqrt{x^2+4}$ $x^2 + 4 \geq 0 \quad x^2 \geq -4 \quad \forall x \in \mathbb{R}$

129 $\sqrt{x} + \sqrt[7]{1-x} + \dfrac{1}{\sqrt{1-x}}$ $[0 \le x < 1]$

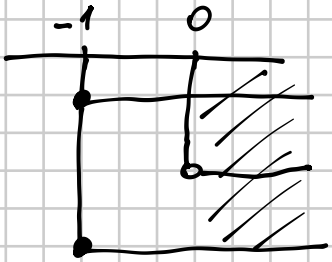
$\forall x$

$\begin{cases} x \ge 0 \\ 1-x > 0 \end{cases}$ $\begin{cases} x \ge 0 \\ x < 1 \end{cases}$

$0 \le x < 1$

132 $\sqrt{x^3 + x^2} + \dfrac{1}{\sqrt{x}} + \sqrt{x+1}$

$\begin{cases} x^3 + x^2 \ge 0 \\ x > 0 \\ x+1 \ge 0 \end{cases}$ $\begin{cases} x^2(x+1) \ge 0 \\ x > 0 \\ x \ge -1 \end{cases}$ $\begin{cases} x \ge -1 \\ x > 0 \\ x \ge -1 \end{cases}$



$x > 0$

① ②

$x^2(x+1) \ge 0$

① $x^2 > 0$ $x \ne 0$

② $x+1 > 0$ $x > -1$