

18.60

14/9/2021

702

$$\sqrt{x+1} - x - 1 = 0$$

[-1; 0]

$$\sqrt[m]{A(x)} = B(x) \Leftrightarrow \begin{cases} B(x) \geq 0 \\ A(x) = B^m(x) \end{cases}$$

M PARI

$$\sqrt{x+1} = x+1$$

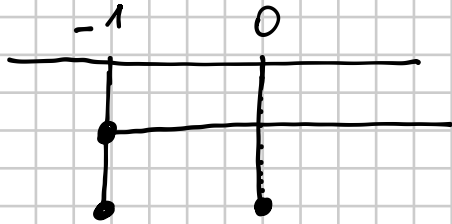
$$\begin{cases} x+1 \geq 0 \\ x+1 = (x+1)^2 \end{cases}$$

$$\begin{cases} x \geq -1 \\ x+1 = x^2 + 2x + 1 \end{cases}$$

$$\begin{cases} x \geq -1 \\ x^2 + x = 0 \end{cases}$$

$$\begin{cases} x \geq -1 \\ x(x+1) = 0 \end{cases}$$

$$\begin{cases} x=0 \\ \vee \\ x=-1 \end{cases}$$



$$x=0 \vee x=-1$$

706

$$\sqrt[3]{x(x^2+5)} - 1 - x = 0$$

$$\sqrt[m]{A(x)} = B(x) \Leftrightarrow A(x) = B^m(x)$$

M DISPARI

$$\sqrt[3]{x(x^2+5)} - 1 = x \quad \left. \begin{array}{l} \\ \end{array} \right\} \text{elevo al cubo}$$

$$x(x^2+5) - 1 = x^3$$

$$\cancel{x^3} + 5x - 1 = \cancel{x^3}$$

$$5x = 1$$

$$x = \frac{1}{5}$$

710

$$3 - 4x - \sqrt{x^2 - 1} = 4 - 3x$$

$$-\sqrt{x^2 - 1} = 4 - 3x - 3 + 4x$$

$$-\sqrt{x^2 - 1} = 1 + x$$

$$\sqrt{x^2 - 1} = -1 - x$$

$$\begin{cases} -1 - x \geq 0 \\ x^2 - 1 = (-1 - x)^2 \end{cases}$$

$$\begin{cases} -x \geq 1 \\ x^2 - 1 = 1 + x^2 + 2x \end{cases}$$

$$\begin{cases} x \leq -1 \\ 2x = -2 \end{cases} \quad \begin{cases} x \leq -1 \\ x = -1 \end{cases}$$

$$\boxed{x = -1}$$

C.E. $x \neq 0$

716

$$\frac{\sqrt[3]{x^3 - 2} + 2}{x} = 1$$

$$\frac{\sqrt[3]{x^3 - 2} + 2}{x} = \frac{x}{x}$$

$$\begin{cases} \sqrt[3]{x^3 - 2} + 2 = x \\ x \neq 0 \end{cases} \quad \begin{cases} \sqrt[3]{x^3 - 2} = x - 2 \\ x \neq 0 \end{cases} \quad \begin{cases} x^3 - 2 = (x - 2)^3 \\ x \neq 0 \end{cases}$$

$$\begin{cases} x^3 - 2 = x^3 - 6x^2 + 12x - 8 \\ x \neq 0 \end{cases} \quad \begin{cases} 6x^2 - 12x + 6 = 0 \\ x \neq 0 \end{cases}$$

$$\begin{cases} 6x^2 - 12x + 6 = 0 \\ x \neq 0 \end{cases}$$

$$\begin{cases} x^2 - 2x + 1 = 0 \\ x \neq 0 \end{cases}$$

$$\begin{cases} (x-1)^2 = 0 \\ x \neq 0 \end{cases}$$

$$\begin{cases} x = 1 \\ x \neq 0 \end{cases}$$

$$\boxed{x = 1}$$

717 $\sqrt{|2x-6|} = |x| - x$

VERA $\forall x \in \mathbb{R}$

INS. SOLUZIONE = \mathbb{R}

$$\begin{cases} |x| - x \geq 0 \\ |2x-6| = (|x| - x)^2 \end{cases}$$

$$\begin{cases} |x| \geq x \\ |2x-6| = x^2 + x^2 - 2x|x| \end{cases}$$

$$\begin{cases} x \in \mathbb{R} \\ |2x-6| = 2x^2 - 2x|x| \end{cases}$$

$$2x-6 \geq 0 \Rightarrow x \geq 3$$

$$x \geq 0$$

	0	3	
	-	-	+
	-	+	+

$$\begin{cases} x \leq 0 \\ -(2x-6) = 2x^2 - 2x(-x) \end{cases}$$

①

$$\vee \begin{cases} 0 \leq x \leq 3 \\ -(2x-6) = 2x^2 - 2x^2 \end{cases}$$

②

$$\vee \begin{cases} x \geq 3 \\ 2x-6 = 2x^2 - 2x^2 \end{cases}$$

③

①

$$\begin{cases} x \leq 0 \\ -2x + 6 = 2x^2 + 2x^2 \end{cases}$$

$$\begin{cases} x \leq 0 \\ 4x^2 + 2x - 6 = 0 \end{cases}$$

$$\begin{cases} x \leq 0 \\ 2x^2 + x - 3 = 0 \end{cases}$$

$$\Delta = 1 + 24 = 25$$

$$x = \frac{-1 \pm 5}{4} = \begin{cases} -\frac{6}{4} = -\frac{3}{2} \\ \frac{4}{4} = 1 \text{ N.A.} \end{cases}$$

$$\boxed{x = -\frac{3}{2}}$$

②

$$\begin{cases} 0 \leq x \leq 3 \\ -2x + 6 = 0 \end{cases}$$

$$\begin{cases} 0 \leq x \leq 3 \\ x = 3 \end{cases}$$

$$\boxed{x = 3}$$

③

$$\begin{cases} x \geq 3 \\ 2x - 6 = 0 \end{cases}$$

$$\begin{cases} x \geq 3 \\ x = 3 \end{cases}$$

$$\boxed{x = 3}$$

$$\boxed{x = -\frac{3}{2} \vee x = 3}$$