30/10/2020

943 $\dfrac{1}{2}(x - \sqrt{2}) + \dfrac{x + \sqrt{2}}{\sqrt{2}} = \dfrac{\sqrt{2} - 1}{\sqrt{2} + 1}$ $[7\sqrt{2} - 10]$

$$\frac{\sqrt{2}(\sqrt{2}+1)(x-\sqrt{2}) + 2(\sqrt{2}+1)(x+\sqrt{2})}{2\sqrt{2}(\sqrt{2}+1)} = \frac{2\sqrt{2}(\sqrt{2}-1)}{2\sqrt{2}(\sqrt{2}+1)}$$

$$\sqrt{2}(\sqrt{2}x - 2 + x - \sqrt{2}) + 2(\sqrt{2}x + 2 + x + \sqrt{2}) = 4 - 2\sqrt{2}$$

$$2x - 2\sqrt{2} + \sqrt{2}x - 2 + 2\sqrt{2}x + 4 + 2x + 2\sqrt{2} = 4 - 2\sqrt{2}$$

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

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

$$x(4 + 3\sqrt{2}) = 2 - 2\sqrt{2}$$

$$x = \frac{2 - 2\sqrt{2}}{4 + 3\sqrt{2}} \cdot \frac{4 - 3\sqrt{2}}{4 - 3\sqrt{2}} = \frac{8 - 6\sqrt{2} - 8\sqrt{2} + 12}{16 - 18} =$$

$$= \frac{20 - 14\sqrt{2}}{-2} = \frac{-2(7\sqrt{2} - 10)}{-2} = 7\sqrt{2} - 10$$

945 $\dfrac{1}{x - \sqrt{5}} + \dfrac{1}{x + \sqrt{5}} = \dfrac{2}{x^2 - 5}$ [1]

$$(x + \sqrt{5})(x - \sqrt{5}) \qquad \text{C.E. } x \neq \pm\sqrt{5}$$

$$\frac{x + \sqrt{5} + x - \sqrt{5}}{(x - \sqrt{5})(x + \sqrt{5})} = \frac{2}{(x - \sqrt{5})(x + \sqrt{5})}$$

$$2x = 2$$

$$x = 1 \quad \text{dopo controllo C.E.}$$

950 $\dfrac{x - \sqrt{2}}{x + \sqrt{2}} - \dfrac{x + \sqrt{2}}{x - \sqrt{2}} = \dfrac{8}{x^2 - 2}$

$$(x + \sqrt{2})(x - \sqrt{2}) \qquad \begin{array}{l}\text{C.E.}\\ x \neq \pm\sqrt{2}\end{array}$$

$$\frac{(x - \sqrt{2})^2 - (x + \sqrt{2})^2}{(x + \sqrt{2})(x - \sqrt{2})} = \frac{8}{(x + \sqrt{2})(x - \sqrt{2})}$$

$$x^2 + 2 - 2\sqrt{2}x - \left(x^2 + 2 + 2\sqrt{2}x\right) = 8$$

$$\cancel{x^2} + \cancel{2} - 2\sqrt{2}x - \cancel{x^2} - \cancel{2} - 2\sqrt{2}x = 8$$

$$-4\sqrt{2}x = 8$$

$$x = -\frac{\overset{2}{\cancel{8}}}{\cancel{4}\sqrt{2}} \cdot \frac{\sqrt{2}}{\sqrt{2}} = -\frac{2\sqrt{2}}{\cancel{2}} = -\sqrt{2} \quad \begin{array}{l}\text{N. ACC.}\\ \text{per C.E.}\end{array}$$

$$\text{IMPOSSIBILE}$$

588 $\quad -\sqrt{2}\begin{cases} x\sqrt{2} - 4y = 2 \\ x - \sqrt{2}\,y = -\sqrt{2} \end{cases}$ $\qquad [(-3\sqrt{2}, -2)]$

$$\Downarrow$$

$$\begin{cases} x\sqrt{2} - 4y = 2 \\ -\sqrt{2}\,x + 2y = 2 \end{cases}$$

$$\underline{\qquad\qquad\qquad}$$

$$// \quad -2y = 4$$

$$\begin{cases} x = \sqrt{2} \cdot (-2) - \sqrt{2} = -3\sqrt{2} \\ \\ y = -2 \end{cases}$$

OSSERVAZIONI

Calcola il DOMINIO di

- $\sqrt{3 + 2x} \quad \Rightarrow \quad 3 + 2x \geqslant 0 \qquad 2x \geqslant -3 \qquad x \geqslant -\dfrac{3}{2}$

  $\uparrow$

  significa stabilire
  per quali valori di x
  il radicale è definito

- $\sqrt{3 - 2x} \quad \Rightarrow \quad 3 - 2x \geqslant 0 \qquad -2x \geqslant -3 \qquad \overset{\text{CAMBIO SEGNI}}{2x \leqslant 3}$

  $$x \leqslant \dfrac{3}{2}$$

- $\sqrt{-3 - 2x} \quad \Rightarrow \quad -3 - 2x \geqslant 0 \qquad -2x \geqslant 3 \qquad \overset{\text{CAMBIO SEGNI}}{2x \leqslant -3}$

  $$x \leqslant -\dfrac{3}{2}$$

- $\sqrt[7]{3x + 1} \qquad$ DOMINIO $= \mathbb{R}$