

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

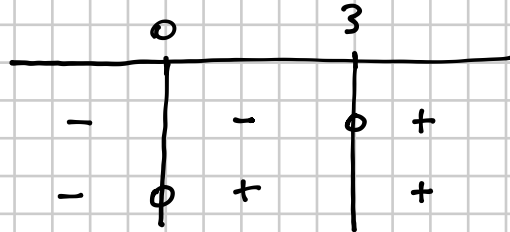
$$\left[-\frac{3}{2}; 3\right]$$

$$\begin{cases} |x| - x \geq 0 \\ |2x-6| = (|x| - x)^2 \end{cases} \quad \begin{cases} |x| \geq x \\ |2x-6| = x^2 + x^2 - 2x|x| \end{cases} \quad \begin{cases} \forall x \in \mathbb{R} \\ |2x-6| = 2x^2 - 2x|x| \end{cases}$$

$$|2x-6| = 2x^2 - 2x|x|$$

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

$$x > 0 \Rightarrow x > 0$$



$$\begin{cases} x < 0 \\ -2x+6 = 2x^2 + 2x^2 \end{cases} \cup \begin{cases} 0 \leq x < 3 \\ -2x+6 = \cancel{2x^2} - \cancel{2x^2} \end{cases} \cup \begin{cases} x \geq 3 \\ 2x-6 = \cancel{2x^2} - \cancel{2x^2} \end{cases}$$

$$\begin{cases} x < 0 \\ 4x^2 + 2x - 6 = 0 \\ 2x^2 + x - 3 = 0 \end{cases} \cup \begin{cases} 0 \leq x < 3 \\ x = 3 \end{cases} \cup \begin{cases} x \geq 3 \\ x = 3 \end{cases}$$

$$\Delta = 1 + 24 = 25 = 5^2$$

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

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

 $\emptyset$ 

$x = 3$

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

718

$$\frac{\sqrt{3x-5}}{2+|x|} = 2$$

C.E.  $2 + |x| \neq 0 \Rightarrow |x| \neq -2 \quad \forall x$

$$\sqrt{3x-5} = 4 + 2|x|$$

$$\begin{cases} 4 + 2|x| \geq 0 \Rightarrow \forall x \in \mathbb{R} \\ 3x - 5 = 16 + 4x^2 + 16|x| \end{cases}$$

$$4x^2 + 16|x| - 3x + 21 = 0$$

$$\begin{cases} x < 0 \\ 4x^2 - 16x - 3x + 21 = 0 \end{cases} \cup \begin{cases} x \geq 0 \\ 4x^2 + 16x - 3x + 21 = 0 \end{cases}$$

$$\begin{cases} x < 0 \\ 4x^2 - 19x + 21 = 0 \end{cases} \cup \begin{cases} x \geq 0 \\ 4x^2 + 13x + 21 = 0 \end{cases}$$

$$\Delta = 361 - 336 = 25$$

$$\Delta = 169 - 336 < 0$$

$$x = \frac{19 \pm 5}{8} \quad \text{n.A.}$$

 $\emptyset$ 
 $\emptyset$ 

$$S = \emptyset$$

IMPOSS.

$$\nexists x \in \mathbb{R}$$

$$\sqrt{2x+7} = 3 - \sqrt{1-x}$$

$$[-3; 1]$$

$$\sqrt{2x+7} + \sqrt{1-x} = 3$$

$$\begin{cases} 2x+7 \geq 0 \\ 1-x \geq 0 \\ 2x+7 + 1-x + 2\sqrt{(2x+7)(1-x)} = 9 \end{cases}$$

$$\begin{cases} x \geq -\frac{7}{2} \\ x \leq 1 \\ 2\sqrt{(2x+7)(1-x)} = -x+1 \end{cases}$$

DE TIPO DI PRIMA

$$\begin{cases} -\frac{7}{2} \leq x \leq 1 \\ -x+1 \geq 0 \end{cases} \Rightarrow -\frac{7}{2} \leq x \leq 1$$

$$4(2x+7)(1-x) = x^2 + 1 - 2x$$

$$4(2x - 2x^2 + 7 - 7x) = x^2 - 2x + 1$$

$$8x - 8x^2 + 28 - 28x - x^2 + 2x - 1 = 0$$

$$-9x^2 - 18x + 27 = 0$$

$$\begin{cases} x^2 + 2x - 3 = 0 \\ (x+3)(x-1) = 0 \end{cases} \begin{cases} -\frac{7}{2} \leq x \leq 1 \\ x = -3 \vee x = 1 \\ \text{entrambe acc.} \end{cases}$$

$$x = -3 \vee x = 1$$