P. 65 N° 737

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

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

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

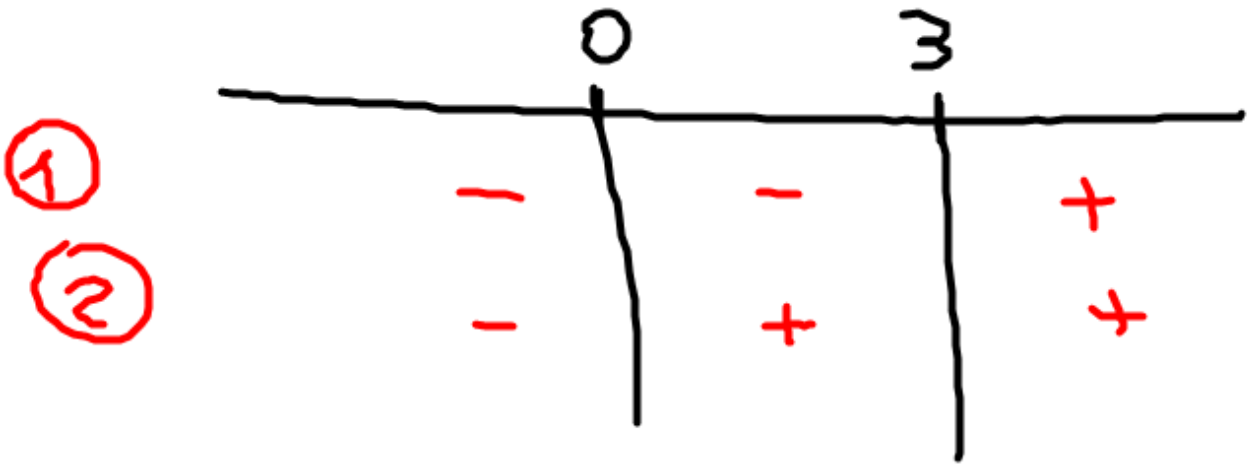
$$|2x-6| = x^2 - 2x|x| + x^2$$

$$|2x-6| - 2x^2 + 2x|x| = 0$$

① ②

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

$x \geq 0$



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

$$\begin{cases} x \leq 0 \\ -2x + 6 - 4x^2 = 0 \\ 2x^2 + x - 3 = 0 \\ x = \dfrac{-1 \pm \sqrt{1+24}}{4} = \begin{cases} -\dfrac{3}{2} \\ 1 \end{cases} \end{cases}$$

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

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

$$\vee \begin{cases} x > 3 \\ 2x - 6 - 2x^2 + 2x^2 = 0 \end{cases}$$

$$\begin{cases} x > 3 \\ x = 3 \end{cases} \quad \text{IMPOSS.}$$

SOLUZ.

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

$x = 3$

N 745

$$\sqrt{2x^2+x-6} = 2\sqrt{3x}$$

$$\begin{cases} 3x \geq 0 \\ 2x^2+x-6 = 12x \end{cases} \quad \begin{cases} x \geq 0 \\ 2x^2-11x-6=0 \end{cases}$$

$$x = \frac{11 \pm \sqrt{121+48}}{4} = \frac{11 \pm 13}{4} = \begin{cases} - \quad \text{N.A.} \\ 6 \end{cases}$$

$$\boxed{x = 6}$$

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

$$2x+7 = 9 + 1 - x - 6\sqrt{1-x}$$

$$3x - 3 = -6\sqrt{1-x}$$

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

$$4(1-x) = (1-x)^2 \rightarrow 1 - x = 0 \Rightarrow x = 1$$

$$4 = 1 - x \Rightarrow x = -3$$

VERIFICA

$x = 1 \rightarrow \sqrt{9} = 3$ OK!

$x = -3 \rightarrow \sqrt{1} = 1$ OK!

$$\boxed{x = 1 \ \vee \ x = -3}$$