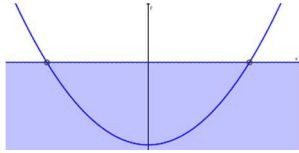


Risolvi le seguenti disequazioni:

1. $3(x - 1)(x + 3) > 7 + 2(3x - 2)$

$$3(x^2 + 2x - 3) - 7 - 2(3x - 2) > 0 \quad 3x^2 + 6x - 9 - 7 - 6x + 4 > 0$$

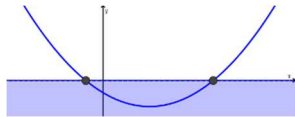
$$3x^2 - 12 > 0 \quad x^2 - 4 > 0 \quad x_{1,2} = \pm 2$$



$x < -2 \vee x > 2$

2. $x^2 - (2\sqrt{3} - 2)x + 3 - 2\sqrt{3} \geq 0$

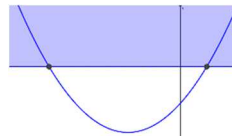
$$x_{1,2} = \sqrt{3} - 1 \pm \sqrt{3 + 1 - 2\sqrt{3} - 3 + 2\sqrt{3}} = \sqrt{3} - 1 \pm 1 = \begin{cases} \sqrt{3} \\ \sqrt{3} - 2 \end{cases}$$



$x \leq \sqrt{3} - 2 \vee x \geq \sqrt{3}$

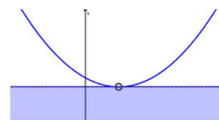
3. $\begin{cases} x^2 + 4x - 5 \leq 0 \\ x^2 - 2x + 1 > 0 \\ -3x < 0 \end{cases}$

$$x_{1,2} = -2 \pm 3 = \begin{cases} 1 \\ -5 \end{cases}$$



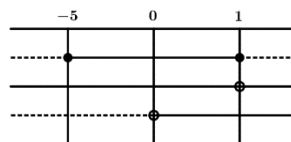
$-5 \leq x \leq 1$

$$(x - 1)^2 > 0$$



$x \neq 1$

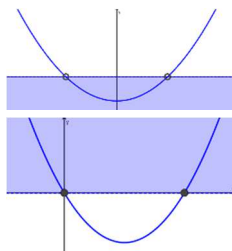
$$\begin{cases} -5 \leq x \leq 1 \\ x \neq 1 \\ x > 0 \end{cases}$$



$0 < x < 1$

4. $\begin{cases} x^2 - 3 > 0 \\ x^2 - 6x \leq 0 \end{cases}$

$$x_{1,2} = \pm\sqrt{3}$$

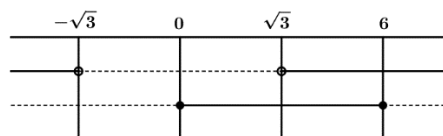


$x < -\sqrt{3} \vee x > \sqrt{3}$

$$x_1 = 0 \quad x_2 = 6$$

$0 \leq x \leq 6$

$$\begin{cases} x < -\sqrt{3} \vee x > \sqrt{3} \\ 0 \leq x \leq 6 \end{cases}$$



$\sqrt{3} < x \leq 6$

$$5. \frac{4x + 5x^2}{x^2 - 1} \geq 1$$

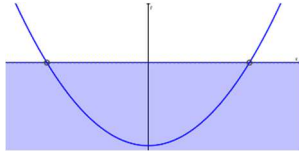
$$\frac{4x + 5x^2 - x^2 + 1}{x^2 - 1} \geq 0$$

$$\frac{4x^2 + 4x + 1}{x^2 - 1} \geq 0$$

$$\frac{(2x + 1)^2}{x^2 - 1} \geq 0$$

$$x^2 - 1 > 0$$

$$x_{1,2} = \pm 1$$



$$x < -1 \vee x > 1 \vee x = -\frac{1}{2}$$

$$6. \frac{x^2 - 1}{2x} - \frac{1}{x} \leq \frac{1}{3} - \frac{2}{x}$$

$$\frac{3(x^2 - 1) - 6 - 2x + 12}{6x} \leq 0$$

$$\frac{3x^2 - 3 - 6 - 2x + 12}{x} \leq 0$$

$$\frac{3x^2 - 2x + 3}{x} \leq 0$$

$$\frac{\Delta}{4} = 1 - 9 < 0$$

$$3x^2 - 2x + 3 > 0 \quad \forall x \in \mathbb{R}$$

$$x < 0$$