

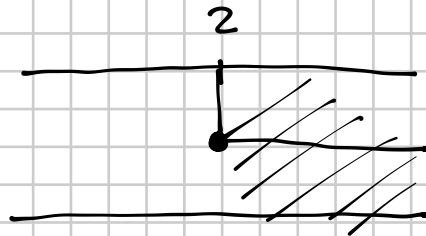
777

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

$$\sqrt{x^2 - 4} < 2x - 1$$

$$\left\{ \begin{array}{l} x^2 - 4 \geq 0 \\ 2x - 1 > 0 \\ x^2 - 4 < 4x^2 + 1 - 4x \end{array} \right. \quad \left\{ \begin{array}{l} x \leq -2 \vee x \geq 2 \\ x > \frac{1}{2} \\ 3x^2 - 4x + 5 > 0 \end{array} \right. \quad x \geq 2$$

$$\left\{ \begin{array}{l} x \geq 2 \\ x \in \mathbb{R} \end{array} \right.$$



$$\frac{\Delta}{4} = 2 - 15 = -13 < 0$$

$$\boxed{x \geq 2}$$

DISEQUAZIONI IRRAZIONALI

DEL TIPO

$$\sqrt{A(x)} > B(x)$$

$$\left\{ \begin{array}{l} B(x) < 0 \\ A(x) \geq 0 \end{array} \right.$$

\vee

$$\left\{ \begin{array}{l} B(x) \geq 0 \\ \cancel{A(x) \geq 0} \\ A(x) > B^2(x) \end{array} \right.$$

NON SERVE
PERCHÉ GIÀ
COMPRESA IN
 $A(x) > \underbrace{B^2(x)}_{\geq 0}$

IN DEFINITIVA

$$\sqrt{A(x)} > B(x) \iff \left\{ \begin{array}{l} B(x) < 0 \\ A(x) \geq 0 \end{array} \right. \vee \left\{ \begin{array}{l} B(x) \geq 0 \\ A(x) > B^2(x) \end{array} \right.$$

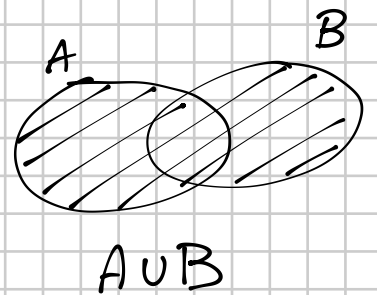
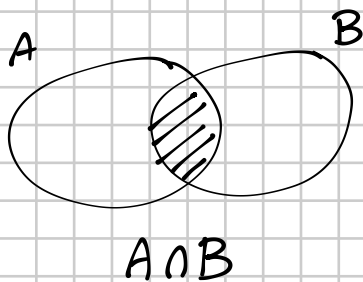
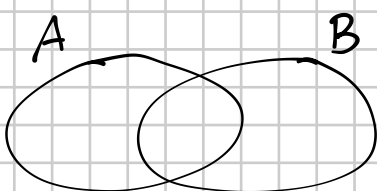
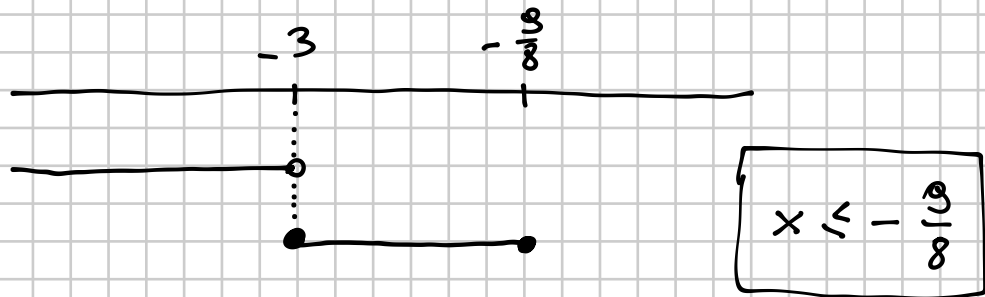
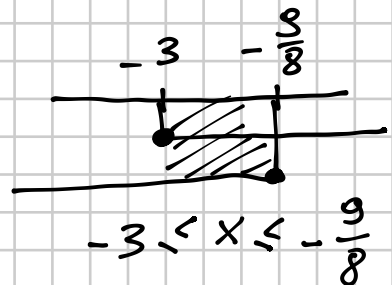
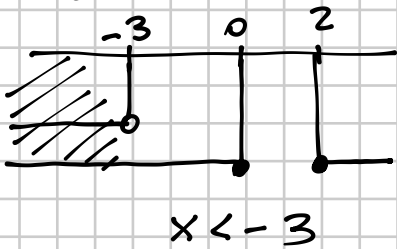
$$\sqrt{x^2 - 2x - 2} \geq x + 1$$

$$\sqrt{x^2 - 2x} \geq x + 3$$

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

$$\begin{cases} x < -3 \\ x(x - 2) \geq 0 \end{cases} \vee \begin{cases} x \geq -3 \\ x^2 - 2x \geq x^2 + 6x + 9 \end{cases}$$

$$\begin{cases} x < -3 \\ x \leq 0 \vee x \geq 2 \end{cases} \vee \begin{cases} x \geq -3 \\ -8x \geq 9 \end{cases}$$



$$\sqrt{2x^2 - 5x} > -x^2 + 2x - 1$$

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

$$\vee \begin{cases} -x^2 + 2x - 1 \geq 0 \\ 2x^2 - 5x > (-x^2 + 2x - 1)^2 \end{cases}$$

$$\begin{cases} x^2 - 2x + 1 > 0 \\ x(2x - 5) \geq 0 \end{cases}$$

$$\vee \begin{cases} x^2 + 2x - 1 \leq 0 \\ 2x^2 - 5x > (-x^2 + 2x - 1)^2 \end{cases}$$

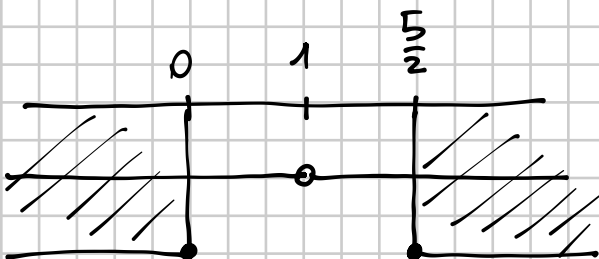
$$x = 0 \quad x = \frac{5}{2}$$

$$\begin{cases} (x-1)^2 > 0 \\ x \leq 0 \vee x \geq \frac{5}{2} \end{cases}$$

$$\vee \begin{cases} (x-1)^2 \leq 0 \\ 2x^2 - 5x > (-x^2 + 2x - 1)^2 \end{cases}$$

$$\begin{cases} x \neq 1 \\ x \leq 0 \vee x \geq \frac{5}{2} \end{cases}$$

$$\vee \begin{cases} x = 1 \\ 2 - 5 > 0 \text{ FALSO!} \\ \emptyset \end{cases}$$



$$x \leq 0 \vee x \geq \frac{5}{2}$$

RIEPILOGO:

$$\sqrt{A(x)} < B(x)$$

$$\begin{cases} B(x) > 0 \\ A(x) \geq 0 \\ A(x) < B^2(x) \end{cases}$$

$$\sqrt{A(x)} \leq B(x)$$

$$\begin{cases} B(x) \geq 0 \\ A(x) \geq 0 \\ A(x) \leq B^2(x) \end{cases}$$

$$\sqrt{A(x)} > B(x)$$

$$\begin{cases} B(x) < 0 \\ A(x) \geq 0 \end{cases} \vee \begin{cases} B(x) \geq 0 \\ A(x) > B^2(x) \end{cases}$$

$$\sqrt{A(x)} \geq B(x)$$

$$\begin{cases} B(x) < 0 \\ A(x) \geq 0 \end{cases} \vee \begin{cases} B(x) \geq 0 \\ A(x) \geq B^2(x) \end{cases}$$