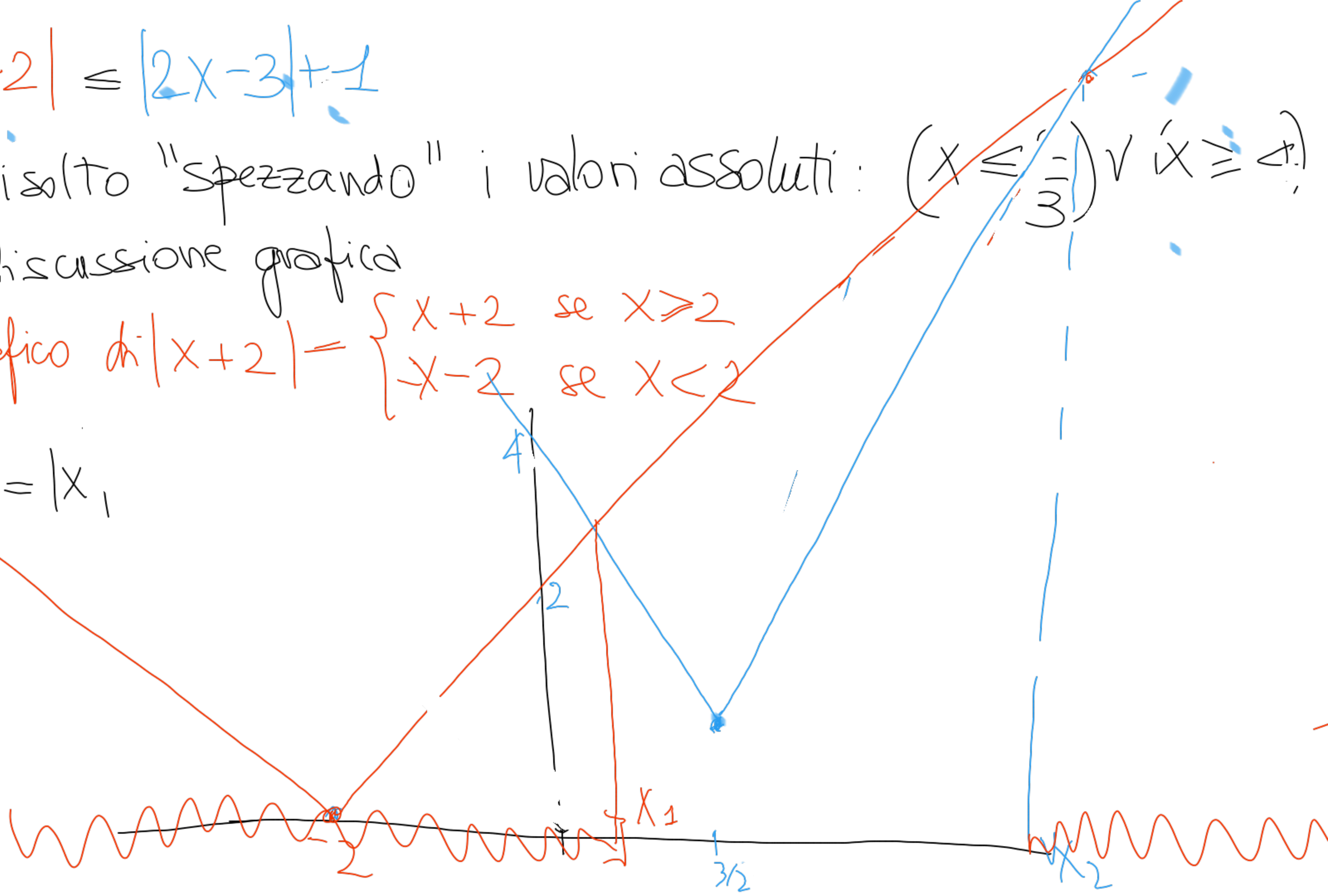


$$|x+2| = |2x-3| + 1$$

- 1) risolto "spezzando" i valori assoluti: $(x \leq \frac{1}{3}) \vee (x \geq 4)$
- 2) discussione grafica

grafico di $|x+2| = \begin{cases} x+2 & \text{se } x \geq -2 \\ -x-2 & \text{se } x < -2 \end{cases}$

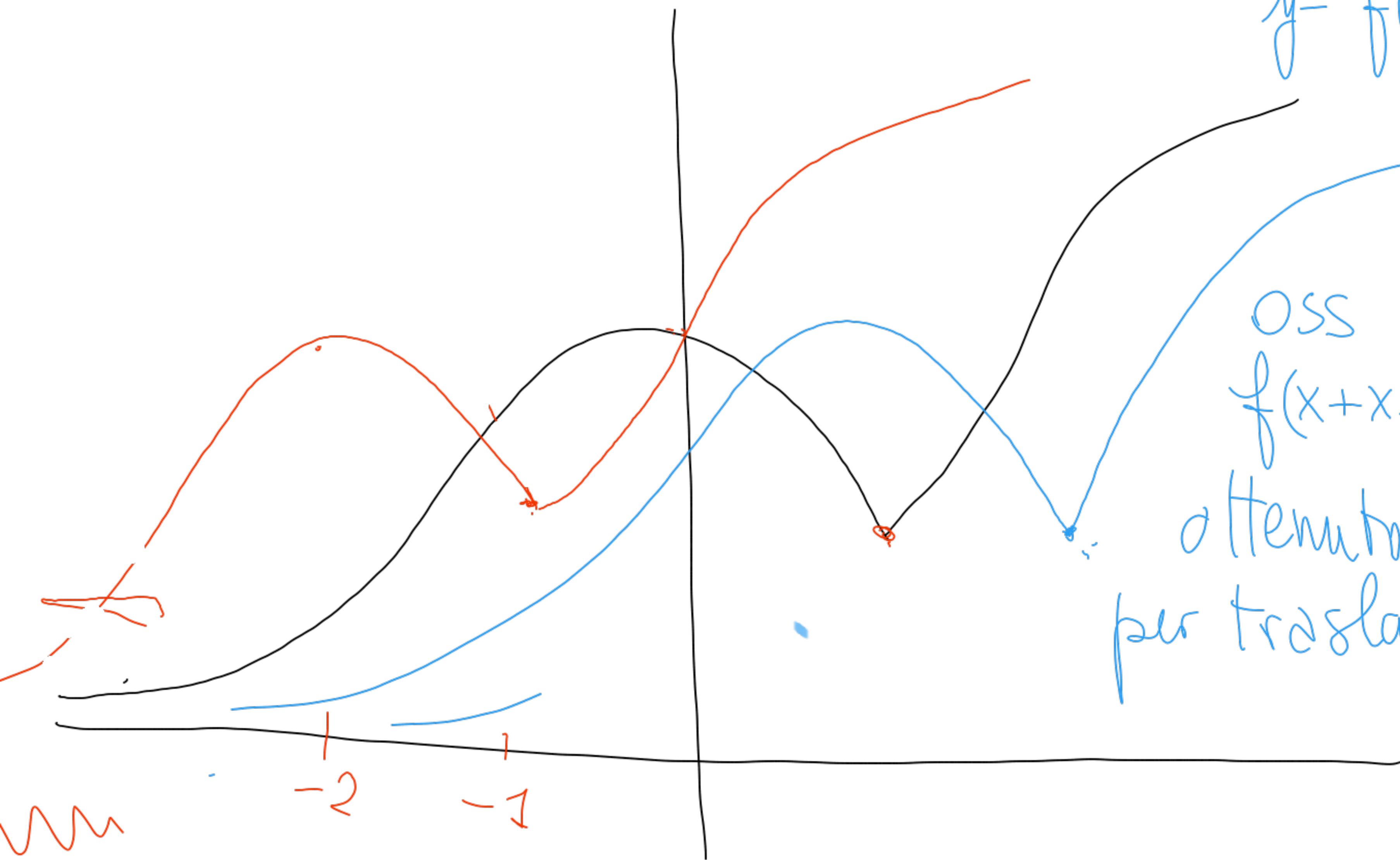
$y = |x|$



$$y = f(x)$$

$$y = f(x+2) =: g(x)$$

$$y = f(x-1) =: h(x)$$



Oss $x_0 \in \mathbb{R}$
 $f(x+x_0)$ ha un grafico
ottenuto da quello di $f(x)$
per traslazione orizzontale
di $-x_0$

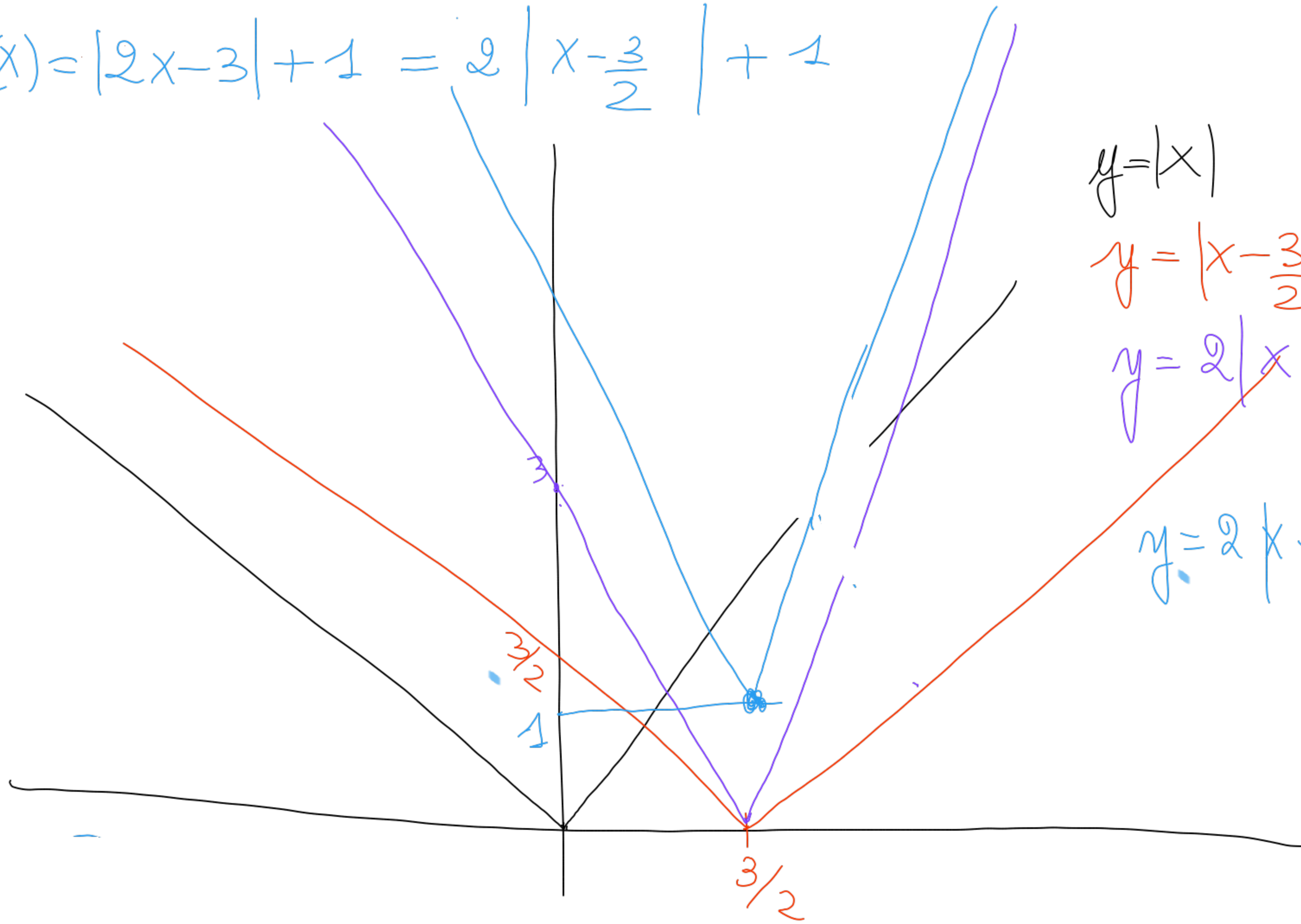
$$g(x) = |2x - 3| + 1 = 2 \left| x - \frac{3}{2} \right| + 1$$

$$y = |x|$$

$$y = \left| x - \frac{3}{2} \right|$$

$$y = 2 \left| x - \frac{3}{2} \right|$$

$$y = 2 \left| x - \frac{3}{2} \right| + 1$$



Trouv x_1

$$\begin{cases} y = x + 2 \\ y = 3 - 2x + 1 \end{cases}$$

$$x + 2 = 3 - 2x + 1$$

$$3x = 2 \quad x_1 = \frac{2}{3}$$

Trouv x_2

$$\begin{cases} y = x + 2 \\ y = 2x - 3 + 1 \end{cases}$$

$$x + 2 = 2x - 3 + 1$$

$$x_2 = 4$$

$$\left(x \leq \frac{2}{3}\right) \vee (x \geq 4)$$

Risolvere la diseq. $|x+2| \leq |x+3|$

$$1) |x+2| = \begin{cases} x+2 & \text{se } x \geq -2 \\ -x-2 & \text{se } x < -2 \end{cases}$$

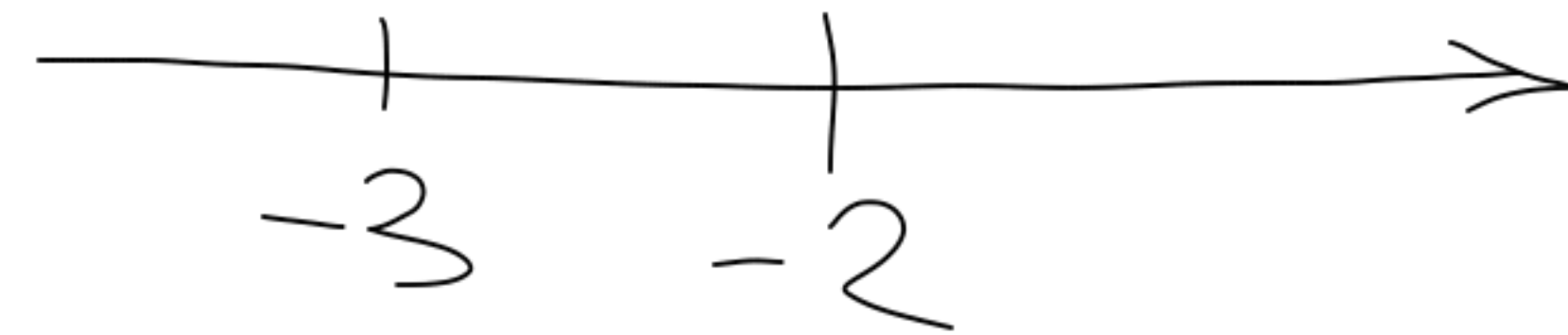
$$|x+3| = \begin{cases} x+3 & \text{se } x \geq -3 \\ -x-3 & \text{se } x < -3 \end{cases}$$

$$\begin{cases} x \geq -2 \\ \cancel{x+2} \leq \cancel{x+3} \\ \text{sempre} \end{cases}$$

$$x \geq -2$$

$$\vee \begin{cases} -3 \leq x < -2 \\ -x-2 \leq x+3 \\ 2x \geq -5 \end{cases}$$

$$-\frac{5}{2} \leq x < -2$$



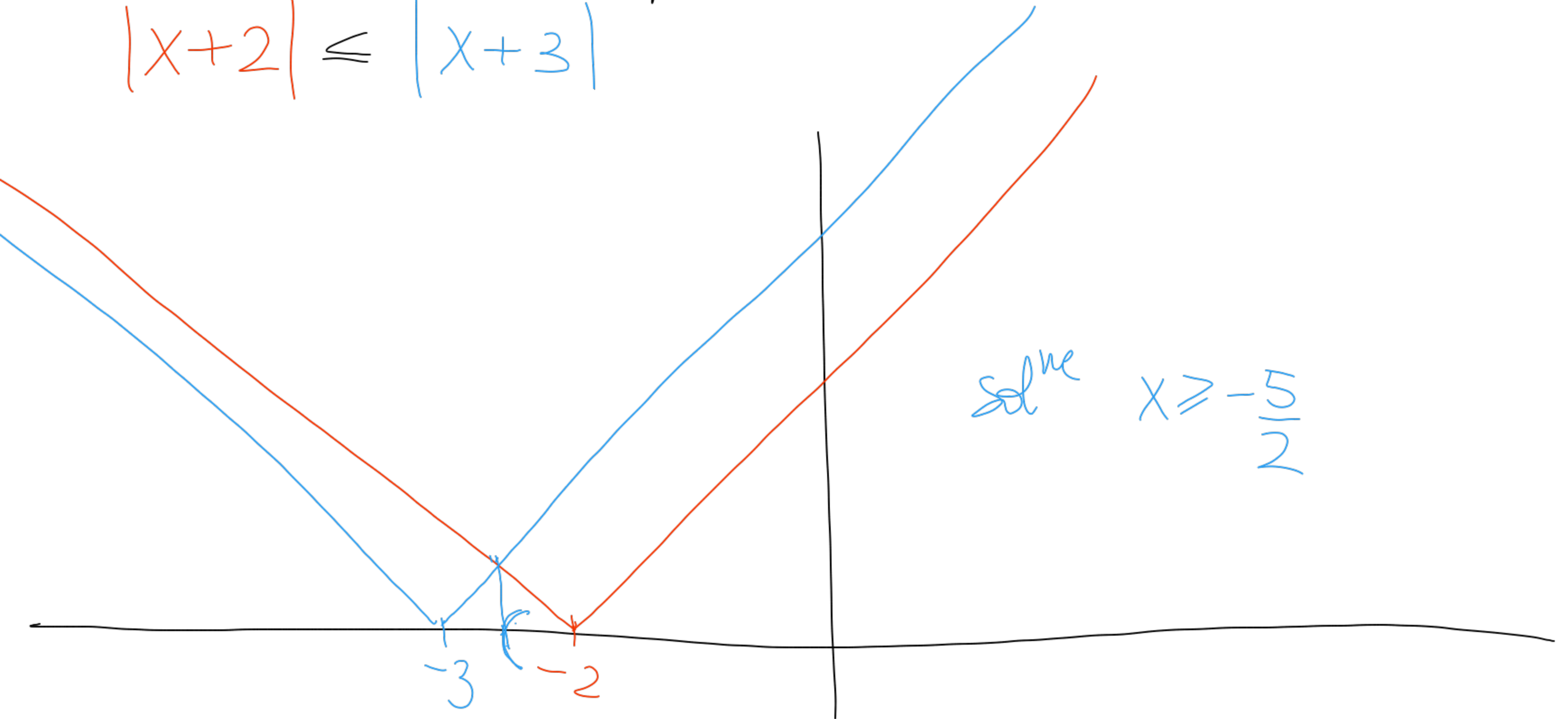
$$\vee \begin{cases} x < -3 \\ \cancel{-x-2} \leq \cancel{-x-3} \end{cases}$$

$\emptyset$

Sol^{ne}
 $x \geq -\frac{5}{2}$

2° modo: discussione grafica

$$|x+2| \leq |x+3|$$



3^o modo

$$|x+2| \leq |x+3|$$

$$\begin{array}{c} \vee \\ 0 \end{array} \quad \updownarrow \quad \begin{array}{c} \vee \\ 0 \end{array}$$

$$|x+2|^2 \leq |x+3|^2$$

$$(x+2)^2 \leq (x+3)^2$$

$$\cancel{x^2} + 4x + 4 \leq \cancel{x^2} + 6x + 9$$

$$2x \geq -5$$

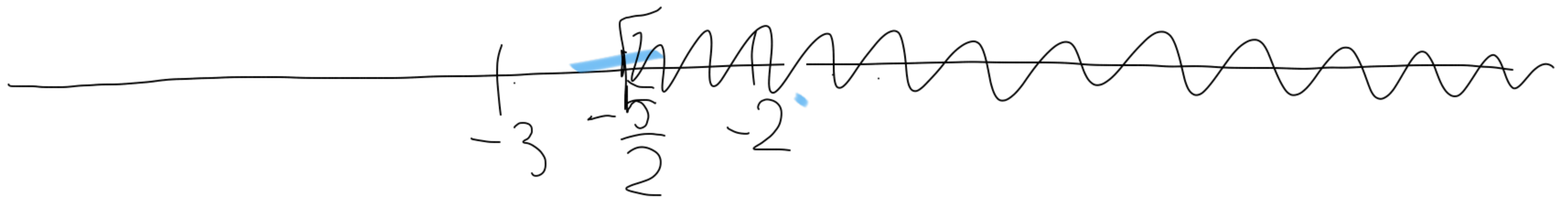
$$x \geq -\frac{5}{2}$$

4º modo. $|R|$ modulo como distancia

$$|X+2| \leq |X+3|$$

dist. de x de -2

dist. de x de -3

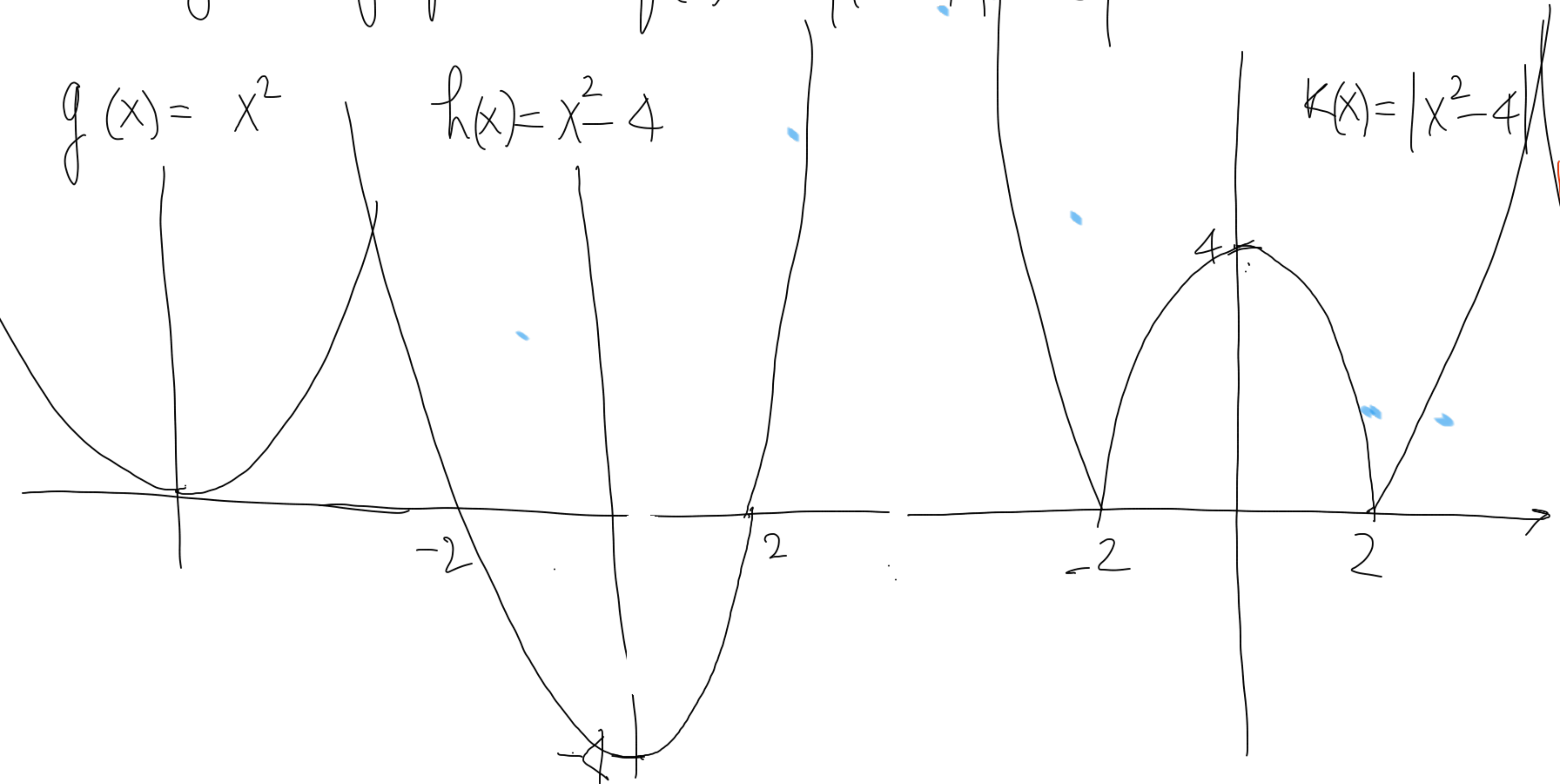


Disegnare il grafico di $f(x) = ||x^2 - 4| - 1|$

$$g(x) = x^2$$

$$h(x) = x^2 - 4$$

$$k(x) = |x^2 - 4|$$



$$t(x) = |x^2 - 4| - 1$$

$$f(x) = ||x^2 - 4| - 1|$$

