CSBE

$\left|\frac{1}{2}x+3\right| > 3x+1$

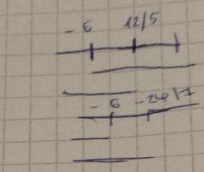
$\begin{cases} \frac{1}{2}x+3 \geq 0 \\ \frac{1}{2}x+3 > 3x+1 \end{cases} \cup \begin{cases} \frac{1}{2}x+3 < 0 \\ -\frac{1}{2}x-3 > 3x+1 \end{cases}$

$\begin{cases} x \geq -6 \\ x < \frac{12}{5} \end{cases} \cup \begin{cases} x < -6 \\ x < -\frac{24}{7} \end{cases}$

$-6 \leq x < \frac{12}{5} \cup \quad x < -6$

$\begin{cases} -\frac{5}{6}x \geq -2 \\ \frac{5}{6}x < 2\frac{5}{6} \\ -\frac{7}{6}x > 4 \end{cases}$

$\frac{5}{7} \quad -\frac{7}{5}x < -\frac{6}{1} \cdot \frac{5}{7}$



es 620

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

$\begin{cases} x^2-3 \geq 0 \\ x^2-3 \leq 2x \end{cases} \quad \begin{cases} x^2-3 < 0 \\ -x^2+3 \leq 2x \end{cases}$

$x^2-2x-3 \leq 0$

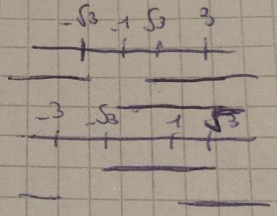
$-1 \leq x \leq 3$

$-x^2-2x+3 \leq 0$

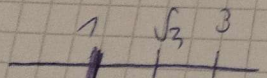
$x^2+2x-3 \geq 0$

$x \leq -3 \vee x \geq 1$

$\begin{cases} x \leq -\sqrt{3} \vee x \geq \sqrt{3} \\ -1 \leq x \leq 3 \end{cases} \quad \begin{cases} -\sqrt{3} \leq x \leq \sqrt{3} \\ x \leq -3 \vee x \geq 1 \end{cases}$



$\sqrt{3} \leq x \leq 3 \quad \cup \quad -1 \leq x < \sqrt{3}$



$S = 1 \leq x \leq 3$

$S: [1, 3]$

es 627

$|9-x^2| \geq x^2+3x$

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

$-3 \leq x \leq 3$

$-2x^2-3x+9 \geq 0$

$2x^2+3x-9 \leq 0$

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

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

$x \leq -3 \vee x \geq 3$

$-3x-9 \geq 0$

$3x \leq -9$

$x \leq -3$

es 624

$|x^2-2x-3| < 3-x$

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

$\begin{cases} x \leq -1 \vee x \geq 3 \\ -2 < x < 3 \end{cases} \vee \begin{cases} -1 < x < 3 \\ x < 0 \vee x > 3 \end{cases}$

$x^2-x-6 < 0$

$-2 < x < 3$

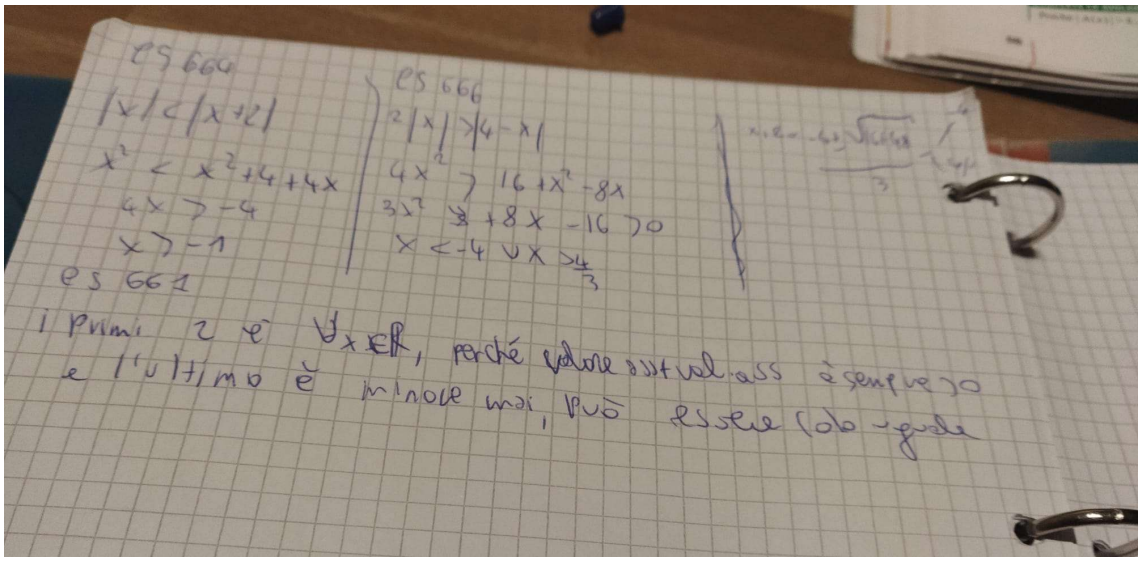
$-x^2+3x < 0$

$x^2-3x > 0$

$x < 0 \vee x > 3$

$-2 < x \leq -1 \quad \vee \quad -1 < x < 0$

$S. \{-2 < x < 0\}$ $\quad S.]-2, 0[$



es 666

$|x| < |x+2|$

$x^2 < x^2+4+4x$

$4x > -4$

$x > -1$

es 661

es 666

$2|x| > |4-x|$

$4x^2 > 16+x^2-8x$

$3x^2 + 8x - 16 > 0$

$x < -4 \vee x > \frac{4}{3}$

$\frac{-8 \pm \sqrt{64+192}}{6}$

I primi 2 è $\forall x \in \mathbb{R}$, perché valore assoluto è sempre ≥ 0 e l'ultimo è minore mai, può essere solo > 0