es 615

$|2x+5| < x-3$

$\begin{cases} -2x+5 \geq 0 \\ -2x+5 < x-3 \end{cases} \cup \begin{cases} -2x+5 < 0 \\ 2x-5 < x-3 \end{cases}$

$\begin{cases} x \leq \frac{5}{2} \\ x > \frac{8}{3} \end{cases} \cup \begin{cases} x > \frac{5}{2} \\ x < 2 \end{cases}$

S: $\nexists x \in \mathbb{R}$ S: $\{\emptyset\}$

es 625

$|2x^2+11x+5| > x^2-25$

$\begin{cases} 2x^2+11x+5 \geq 0 \\ 2x^2+11x+5 > x^2-25 \end{cases} \cup \begin{cases} 2x^2+11x+5 < 0 \\ -2x^2-11x-5 > x^2-25 \end{cases}$

$\begin{cases} x \leq -5 \vee x \geq -\frac{1}{2} \\ x < -6 \vee x > -5 \end{cases} \cup \begin{cases} -5 < x < -\frac{1}{2} \\ -5 < x < \frac{4}{3} \end{cases}$

$x^2+11x+30$

$-3x^2-11x+20 > 0$

$3x^2+11x-20 < 0$

$x < -6 \vee x > -\frac{1}{2} \cup -5 < x < \frac{4}{3}$

S: $x < -6 \vee x > -5$,

S: $]-\infty, -6[\cup]-5, +\infty[$

es 630

$3 - |x+4| < 0$

$-|x+4| < -3$

$3 < |x+4|$

$-|x+4| < -3$

$|x+4| > 3$

$x+4 < -3 \vee x+4 > 3$

$x < -7 \vee x > -1$

$2 < 3 \Rightarrow 3 < 2$

~~$x > 2$~~ ~~$2 < x$~~

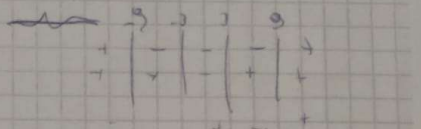
es 637

$\frac{|x| - 9 \geq 0}{x^2 - 9}$

$N \geq 0$ $\quad |x| \geq 9$

$x \leq -9 \vee x \geq 9$

$D \quad x^2 \geq 9 \quad x < -3 \vee x > 3$



$S: x \leq -9 \vee -3 < x < 3 \vee x \geq 9$

$S:]-\infty, 9] \cup]-3, 3[\cup [9, +\infty[$

60

Risolvi i seguenti sistemi di disequazioni.

699 $\begin{cases} |x+5| < 7 \\ -x \leq |x+2| - 1 \end{cases}$

692 $\frac{|2x-3|-1}{|x|-2} \geq 0$

694 $\begin{cases} |x-3| \leq 2x \\ |2x+5| > 3 \end{cases}$

es 655

$|2x+3| - |$

$|2x+3| <$

$2x+3 \geq 0$

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

$\begin{cases} x < -\frac{3}{2} \\ -2x-3 < \end{cases}$

$\begin{cases} x < -\frac{3}{2} \\ x < 9 \end{cases}$

es 655

$3|x+2| - 5 < 2|x+2|$

$x+2 \geq 0 \quad x \geq -2$

$\begin{cases} 3x+6-5 < 2x+4 \\ x < -2 \end{cases} \cup \begin{cases} 3x+6-5 < 2x+4 \\ x \geq -2 \end{cases}$

$\begin{cases} x > -7 \\ x < -2 \end{cases} \cup \begin{cases} x < 3 \\ x \geq -2 \end{cases}$

$-7 < x < -2 \cup -2 \leq x < 3$

$-7 < x < 3$

$S:]-7; 3[$

es 652

$\left|\frac{x+3}{x-2}\right| < 4$

$-4 < \left|\frac{x+3}{x-2}\right| < 4$

$\begin{cases} \frac{x+3}{x-2} > -4 \\ \frac{x+3}{x-2} < 4 \end{cases}$

$\frac{x+3+4x-8}{x-2} > 0$

$\frac{x+3-4x+8}{x-2} > 0$

$x < 1 \vee x > 2$

$x < 2 \vee x > \frac{11}{3}$

$3x > 11$

$x < \frac{11}{3}$

$x > 2$

$S: x < 1 \vee x > \frac{11}{3}$

$S:]-\infty, 1[\cup]\frac{11}{3}, +\infty[$

60

693 $\begin{cases} |x+5| < 7 \\ -x < |x+2| - 1 \end{cases}$ $-\frac{1}{2} < x < 2$ 694 $\begin{cases} |x-3| < 2x \\ |2x+5| > 3 \end{cases}$

Risolvi i seguenti sistemi di disequazioni.

ESEMPIO

$|x-1| + |x+1| > 5$

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

$\begin{cases} -1 \le x < 1 \\ -x+1+x+1 > 5 \end{cases}$ falso

$\begin{cases} x-1+x+1 > 5 \\ x \ge 1 \end{cases}$ $x > \frac{5}{2}$

S: $x < -\frac{5}{2} \vee x > \frac{5}{2}$

S: $]-\infty; -\frac{5}{2}[\cup]\frac{5}{2}; +\infty[$

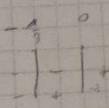
$x \ge -1$ $x \ge 1$

ESEMPIO

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

$x \ge 0$

$3x+1 \ge 0$



$\begin{cases} x < -\frac{1}{3} \\ -2x + 3x + 1 < 1 \end{cases}$ $x < -3$

$\begin{cases} -\frac{1}{3} \le x < 0 \\ -2x - 3x < 1 \end{cases}$ $-5x < 4$ $x > -\frac{4}{5}$

$-\frac{4}{5}$ $-\frac{1}{3}$ 0

$\begin{cases} x \ge 0 \\ 2x - 3x - 3 < 1 \end{cases}$ $x \ge 0$

$-x < 4$

$x > -4$

S: $\forall x \in \mathbb{R}$

S: $]-\infty, +\infty[$