Compiti su disequazioni

es 609

(B) 610 a $S:\{\emptyset\}$ b $S\{\forall x \in \mathbb{R}\}$ c $x \neq 1/2$ d $x=0, x$ e $S:\emptyset$ f $\forall x \in \mathbb{R}$

es 624

$|6-x|>3$

$6-x=\pm 3$

$+x=+3$

$+x=+9$

$S:\{x<3 \vee x>9\}$

es 628

$|x^2+1|+2>0$

$|x^2+1|>-2 \quad \forall x \in \mathbb{R}$

es 631

$|8x^2-1|\geq 1$

$8x^2 \leq 0 \vee 8x^2 \geq 2$

$x=0 \quad x\leq -\frac{1}{2} \vee x\geq \frac{1}{2}$

$S:\{0\} \cup]-\infty, -\frac{1}{2}] \cup [\frac{1}{2}, +\infty[$

$8x^2-1=-1$

$x=0$

$8x^2=2$

$4x^2=1$

$x^2=\frac{1}{4} \quad x=\pm\frac{1}{2}$

633

$x^2-3x+2>2$

$x^2-3x<-4 \vee x^2-3x>0$

$x^2-3x+4>0 \vee x^2-3x>0$

$S=\{x<0 \vee x>3\}$

$x_{1,2}=3\pm\sqrt{9-16}$ imp. $\forall x \in \mathbb{R}$

$x(x-3)$

$x=0, 3 \quad x<0 \vee x>3$

$\left|\frac{2x-1}{x-4}\right| + 2 > 0$

$\left|\frac{2x-1}{x-4}\right| > -2$

$\frac{2x-1}{x-4} > -2 \quad \vee \quad \frac{2x-1}{x-4} < 2$

$x < \frac{1}{2} \vee x > 2 \quad \vee \quad x > 6$

$x - 4 \neq 0 \quad x \neq 4$

$S: \{\forall x \in \mathbb{R}, x \neq 4\}$

es 636

$\frac{|x| - 1}{x} > 0$

$x - 1 > 0 \quad x > 1$

$x > 0$

$x < 0 \vee x > 1$

$\frac{-x - 1}{x} > 0 \quad x < -1$

$x > 0$

$x < -1 \vee x > 0$

es 642

$2 + |3x - 4| < 1$

$|3x - 4| < -1$ Impossibile $S: \emptyset$

es 644

$|4 - 5x| < 1$

$\begin{cases} 4 - 5x < 1 \\ 4 - 5x > -1 \end{cases}$

$-5x < -3 \quad x > \frac{3}{5}$

$-5x < -5 \quad x < 1$

$\frac{3}{5} < x < 1$

$4 - 5x < -1 \quad x > \frac{3}{5}$

$x < 1$