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$$5 \geq |x-6| + 1$$

$$|x-6| \leq 4$$

Caso a: $x-6 \geq 0 \rightsquigarrow x \geq 6$

$$x-6 \leq 4 \rightsquigarrow x \leq 10$$

Confronto la soluzione con la condizione del caso a. Confronto
significa entrambe vere, che significa sistema

$$\left\{ \begin{array}{l} x \geq 6 \\ x \leq 10 \end{array} \right. \quad 6 \leq x \leq 10 \quad \text{soluzione} \\ \quad \quad \quad [6, 10] \quad \text{caso a}$$

Caso b: $x-6 < 0 \rightsquigarrow x < 6$

$$\begin{array}{l} -(x-6) \leq 4 \\ -x+6 \leq 4 \\ x \geq 2 \end{array} \quad \rightsquigarrow \quad \left\{ \begin{array}{l} x < 6 \\ x \geq 2 \end{array} \right. \rightsquigarrow \quad \begin{array}{l} 2 \leq x < 6 \\ [2; 6) \end{array}$$

Prendo tutte le soluzioni che ho trovato nel caso a e nel caso b
e le UNISCO

$$\begin{array}{ccc} \text{Caso b} & & \text{Caso a} \\ 2 \leq x < 6 & \vee & 6 \leq x \leq 10 \\ & \downarrow & \\ & 2 \leq x \leq 10 & \end{array}$$

Ex 355

$$\left| \frac{3}{2}x - \frac{1}{6} \right| + x > \frac{1}{3}x + 2$$

$$\left| \frac{9x-1}{6} \right| > \frac{2x+12-6x}{6}$$

$$|9x-1| > 12-4x$$

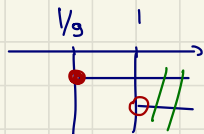
Caso a: $9x-1 \geq 0 \rightsquigarrow x \geq \frac{1}{9}$

$$9x-1 > 12-4x$$

$$13x > 13$$

$$x > 1$$

$$\begin{cases} x \geq \frac{1}{9} \\ x > 1 \end{cases}$$



\rightsquigarrow

$$x > 1 \\ (1; +\infty)$$

Caso b: $9x-1 < 0 \rightsquigarrow x < \frac{1}{9}$

$$1-9x > 12-4x$$

$$5x < -11$$

$$x < -\frac{11}{5}$$

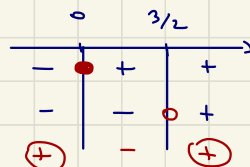
$$\begin{cases} x < \frac{1}{9} \\ x < -\frac{11}{5} \end{cases}$$

$$x < -\frac{11}{5} \\ (-\infty; -\frac{11}{5})$$

Sol: $x < -\frac{11}{5} \vee x > 1$

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

Caso a: $\frac{x}{2x-3} \geq 0$ $N \geq 0$ $x \geq 0$
 $D > 0$ $2x-3 > 0$ $x > \frac{3}{2}$



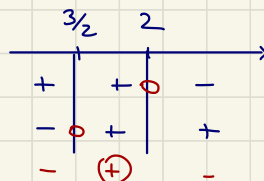
$x \leq 0 \vee x > \frac{3}{2}$

Condizione del caso a

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

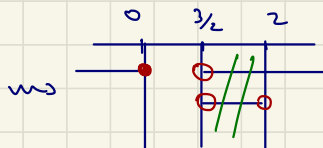
$$\frac{x-4x+6}{2x-3} > 0 \rightsquigarrow \frac{-3x+6}{2x-3} > 0$$

$N > 0$ $-3x+6 > 0 \rightsquigarrow x < 2$ N $+$ $+$ 0 $-$
 $D > 0$ $2x-3 > 0 \rightsquigarrow x > \frac{3}{2}$ D $-$ 0 $+$ $+$



$\frac{3}{2} < x < 2$

Confronto $\left\{ \begin{array}{l} x \leq 0 \vee x > \frac{3}{2} \\ \frac{3}{2} < x < 2 \end{array} \right.$



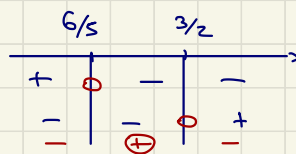
$\frac{3}{2} < x < 2$

Caso b: $\frac{x}{2x-3} < 0$

$0 < x < \frac{3}{2}$

$$-\frac{x}{2x-3} > 2 \rightsquigarrow \frac{-x-4x+6}{2x-3} > 0 \rightsquigarrow \frac{-5x+6}{2x-3} > 0$$

$N > 0$ $-5x+6 > 0 \rightsquigarrow x < \frac{6}{5}$
 $D > 0$ $2x-3 > 0 \rightsquigarrow x > \frac{3}{2}$



$$\frac{6}{5} < x < \frac{3}{2}$$

Confronto: $\begin{cases} 0 < x < \frac{3}{2} \\ \frac{6}{5} < x < \frac{3}{2} \end{cases} \rightsquigarrow \boxed{\frac{6}{5} < x < \frac{3}{2}}$

Trovate le sol di Caso a e Caso b le unisco

Caso b

Caso a

$$\frac{6}{5} < x < \frac{3}{2}$$

$$\frac{3}{2} < x < 2$$

Sol:

$$\frac{6}{5} < x < 2 \text{ con } x \neq \frac{3}{2}$$

$$\left(\frac{6}{5}, \frac{3}{2} \right) \cup \left(\frac{3}{2}, 2 \right)$$