

Inéquations Linéaires

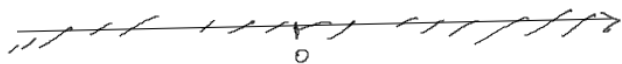
$$ax > b \Leftrightarrow \begin{cases} x > \frac{b}{a} & \text{si } a > 0 \\ x < \frac{b}{a} & \text{si } a < 0 \\ 0 > b & \text{si } a = 0 \end{cases}$$

• Résoudre : $3(y-5) - 3(y+6) \leq 7$.

$$\cancel{3y} - 15 - \cancel{3y} - 18 \leq 7$$

$$-33 \leq 7$$

toujours vraie



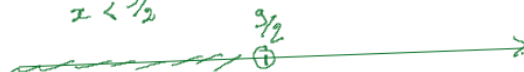
$$S = (-\infty, +\infty) = \mathbb{R}$$

• Résoudre $-2x + 3 > -6$

$$-2x > -3 - 6$$

$$x < -\frac{9}{-2}$$

$$x < \frac{9}{2}$$



$$S = (-\infty, \frac{9}{2})$$

... Résoudre : $-\frac{9}{4} < 5 - 3x \leq -4$

1^{re} méthode

$$\Leftrightarrow \begin{cases} -\frac{9}{4} < 5 - 3x \\ \text{et} \\ 5 - 3x \leq -4 \end{cases} \rightarrow \begin{cases} S_1 \\ \text{et} \\ S_2 \end{cases} \Rightarrow S_1 \cap S_2$$

2^{de} méthode

$$\Leftrightarrow -\frac{9}{4} - 5 < \cancel{5} - 3x - \cancel{5} \leq -4 - 5$$

$$\Leftrightarrow -\frac{29}{4} < -3x \leq -9$$

$$\Leftrightarrow \begin{cases} -3x \leq -9 \\ \text{et} \\ -3x > -\frac{29}{4} \end{cases} \Leftrightarrow \begin{cases} x \geq \frac{-9}{-3} = 3 \\ \text{et} \\ x < +\frac{29}{12} \end{cases}$$

S_1

$$x < \frac{29}{12}$$

S_2

$$x \geq 3$$

$$S = S_1 \cap S_2 = \emptyset$$