

Equations / Inequations

$$\bullet \quad 2x + 3 = -3x + 7$$

$$2x + 3x = 7 - 3$$

$$5x = 4$$

$$x = \frac{4}{5}$$

$$\text{dare } S = \left\{ \frac{4}{5} \right\}$$

- $-4x + 1 = 9 + 6x$

$$\hookrightarrow g = \left\{ \frac{8}{-10} \right\} = \left\{ -\frac{4}{5} \right\}$$

- $(-x - 4)(-x + 7) = 0$

$$\swarrow$$

$$x = -4$$

$$\searrow$$

$$x = 7$$

- $\frac{5 - 8x}{x - 2} = 0.$

$$\Leftrightarrow 5 - 8x = 0 \Leftrightarrow x = \frac{5}{8}$$

$$\bullet \quad \frac{-3x - 1}{8 - 5x} = 3$$

$$-3x - 1 = 3(8 - 5x)$$

$$-3x - 1 = 24 - 15x$$

$$-3x + 15x = 24 + 1$$

$$12x = 25$$

$$x = \frac{25}{12}$$

$$\bullet \quad \frac{3x-1}{x-5} \overset{\text{red arrow}}{=} \overset{\text{green arrow}}{\frac{3x-4}{x}}$$

$$x(3x-1) = (x-5)(3x-4)$$

$$3x^2 - x = 3x^2 - 19x + 20$$

$$\cancel{3x^2} - x - \cancel{3x^2} + 19x = 20$$

$$18x = 20$$

$$x = \frac{20}{18} = \frac{10}{9}$$

$$\bullet \quad 6x + 7 > 4x + 8$$

$$2x > 1$$

$$x > \frac{1}{2}$$

$$\hookrightarrow \mathcal{S} =]\frac{1}{2}, +\infty[$$

$$\bullet \quad x + 1 \geq 9x + 25.$$

$$-8x \geq 24$$

$$x \leq \frac{24}{-8} = -3$$

$$x \leq -3$$

$$\bullet (x - 8)(-1 - 10x) \leq 0$$

≥ 0

$$x - 8 \geq 0$$

$$x \geq 8$$

$$-1 - 10x \geq 0$$

$$x \leq \frac{-1}{-10} = -0,1$$

x	$-\infty$	$-0,1$	8	$+\infty$
$x-8$	$-$	$-$	0	$+$
$-1-10x$	$+$	0	$-$	$-$
$(x-8) \cdot (-1-10x)$	$-$	0	$+$	$-$

donc $S =]-\infty; -0,1] \cup [8; +\infty[$

