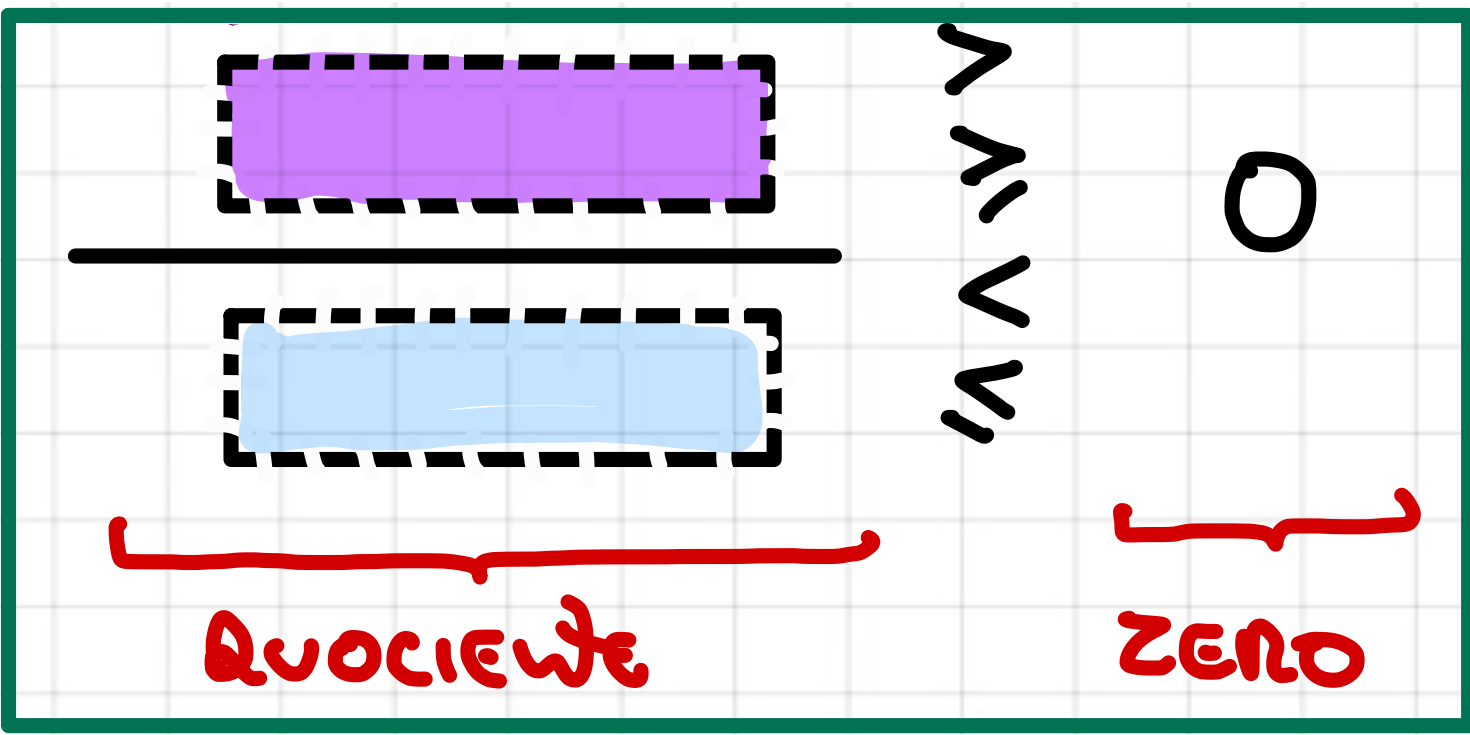


# 4) Inequação Quociente

Ex: 
$$\frac{\overset{\textcircled{I}}{x+11}}{\underset{\textcircled{II}}{x-5}} \geq 0$$

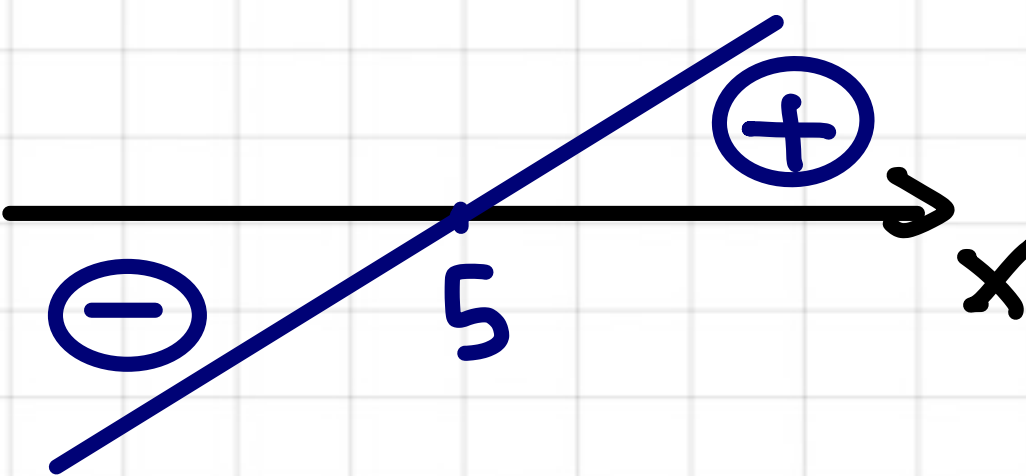
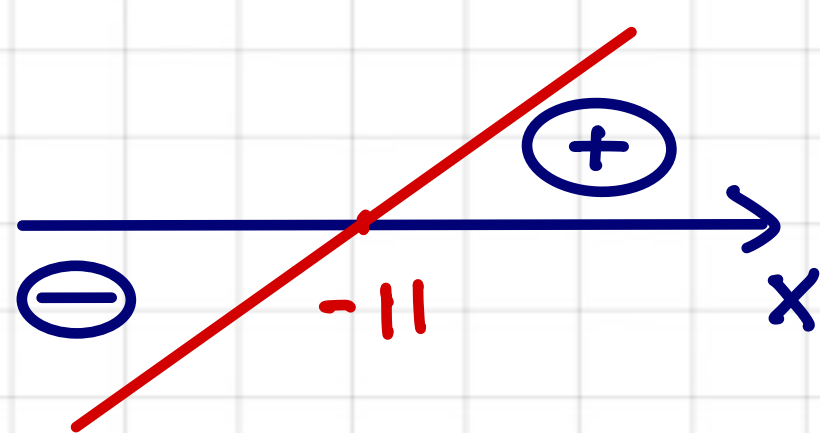


CONDICÃO DE EXISTÊNCIA (C.E.)  
 $x-5 \neq 0 \rightarrow x \neq 5$

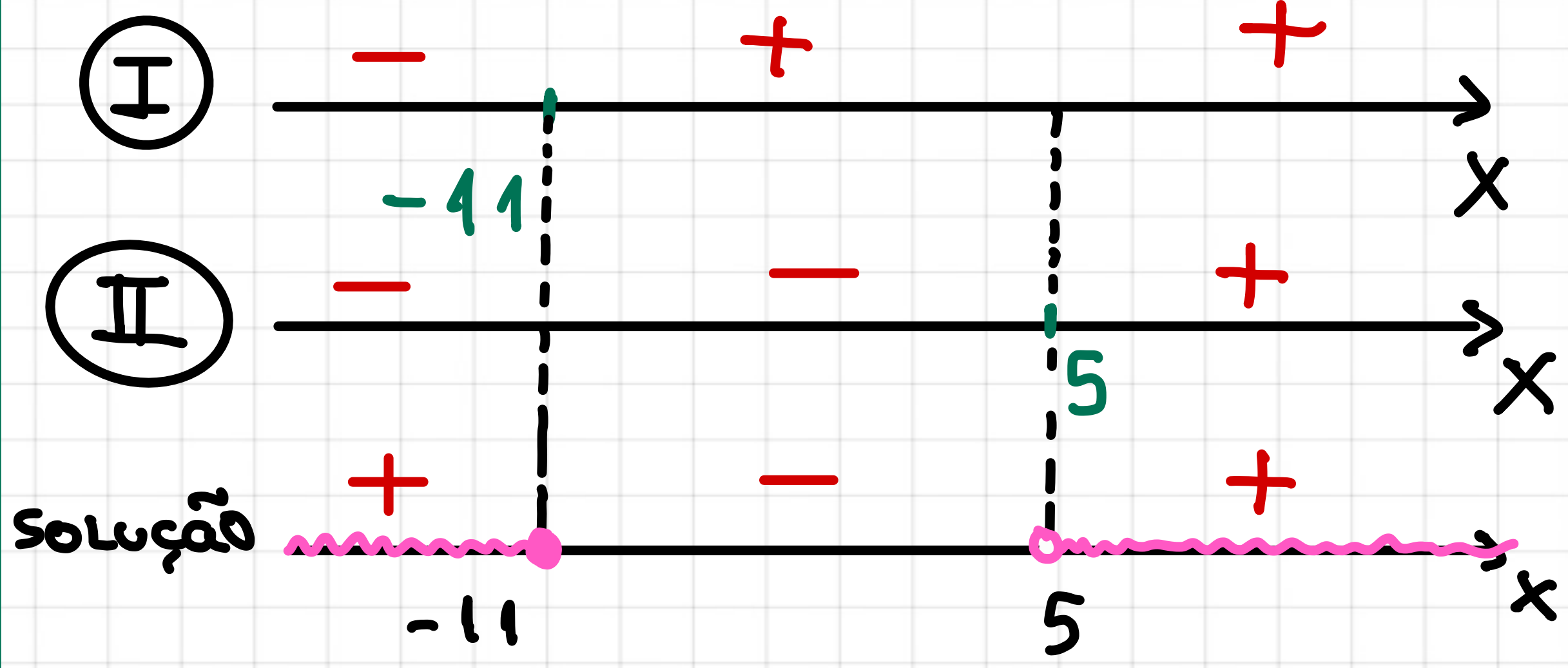
Estudo do sinal

$\textcircled{I} \quad y = x + 11$   
 Raiz  $\rightarrow x + 11 = 0$   
 $x = -11$

$\textcircled{II} \quad y = x - 5$   
 Raiz  $\rightarrow x - 5 = 0$   
 $x = 5$



## Quadro de Sinal



$S = \{x \in \mathbb{R} / x \leq -11 \text{ ou } x > 5\}$   
 $S = ]-\infty, -11] \cup ]5, +\infty[$

Ex: (CLÁSSICO!)

$$\frac{6x - 10}{x + 1} > 2$$



$$6x - 10 > 2x + 2$$

$$4x > 12$$

$$x > 3$$

(ERRADO!!!)



$(x > 2) \quad \frac{x}{2} > 15 \quad (x > 2)$
$x > 30$
$x < (-5) \quad \frac{x}{-5} > 10 \quad x < (-5)$
$x < -50$

correto:

$$\frac{6x - 10}{x + 1} - 2 > 0$$

$$\frac{6x - 10 - 2(x + 1)}{x + 1} > 0$$

$$\frac{6x - 10 - 2x - 2}{x + 1} > 0$$

$$\frac{4x - 12}{x + 1} > 0$$

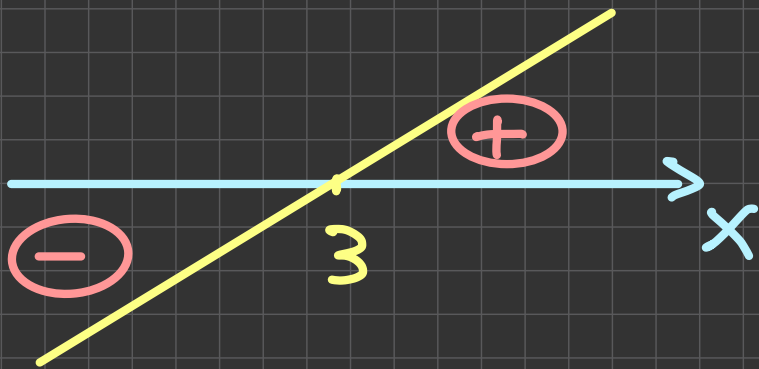
(inequação  
quociente)

$$\frac{4x-12}{x+1} > 0$$

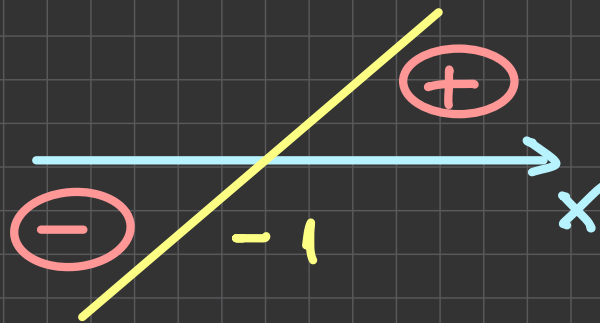
C.E.  
 $x+1 \neq 0$   
 $\rightarrow x \neq -1$

Estudo do sinal

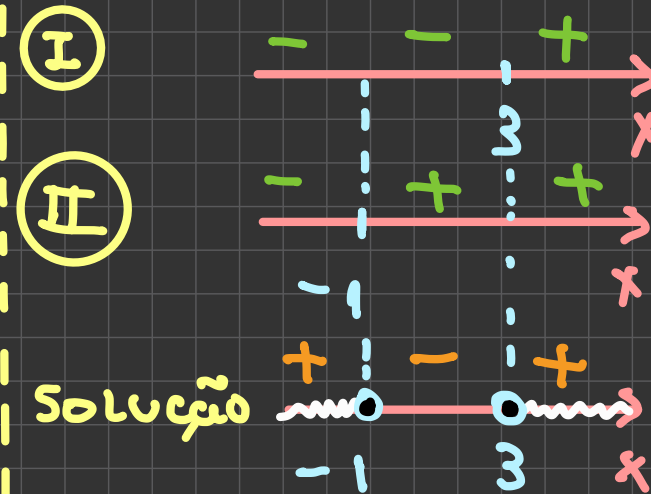
(I)  $y = 4x - 12$   
 Raiz  $\rightarrow 3$



(II)  $y = x + 1$   
 Raiz  $\rightarrow -1$



Quadro de Sinais



Solução

$$S = \{x \in \mathbb{R} / x < -1 \text{ ou } x > 3\}$$