Exercice 14 :

Déterminez à quel ensemble appartient 1/x dans les cas suivants :

1°) $0 < x \leq 3$

2°) $-2 < x < 0$

3°) $x < -5$

4°) $x \geq 7$

On pourra justifier par la visualisation graphique des propriétés.

1°) $0 < x \leq 3$ donne $1/x$ … ?

On connait x

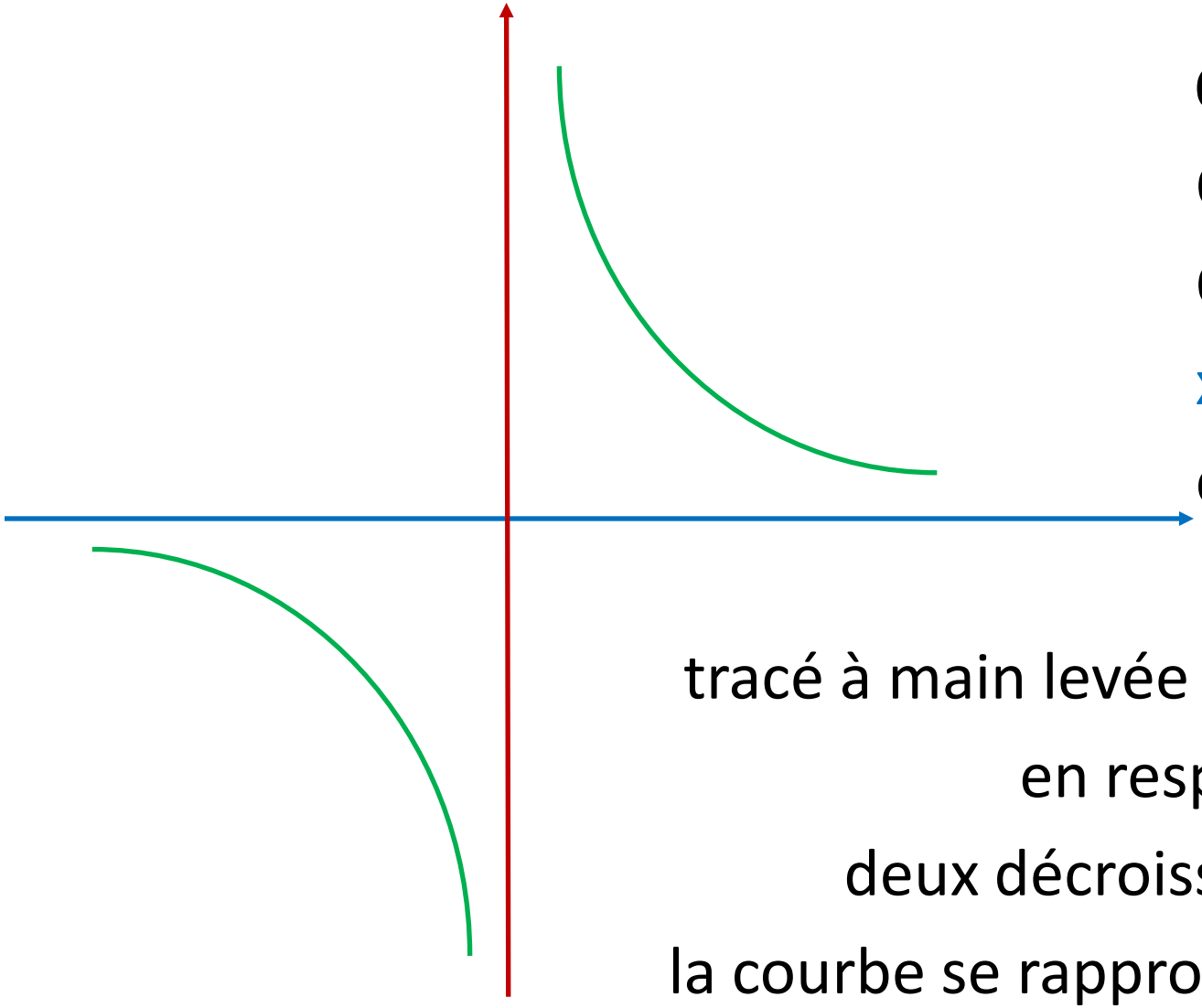
On veut connaître $1/x$

On veut donc passer de x à $1/x$

$x \mapsto 1/x$

qui est la fonction inverse

1°) $0 < x \leq 3$ donne $1/x$ … ?



On connait x

On veut connaître $1/x$

On veut donc passer de x à $1/x$

$x \mapsto 1/x$

qui est la fonction inverse

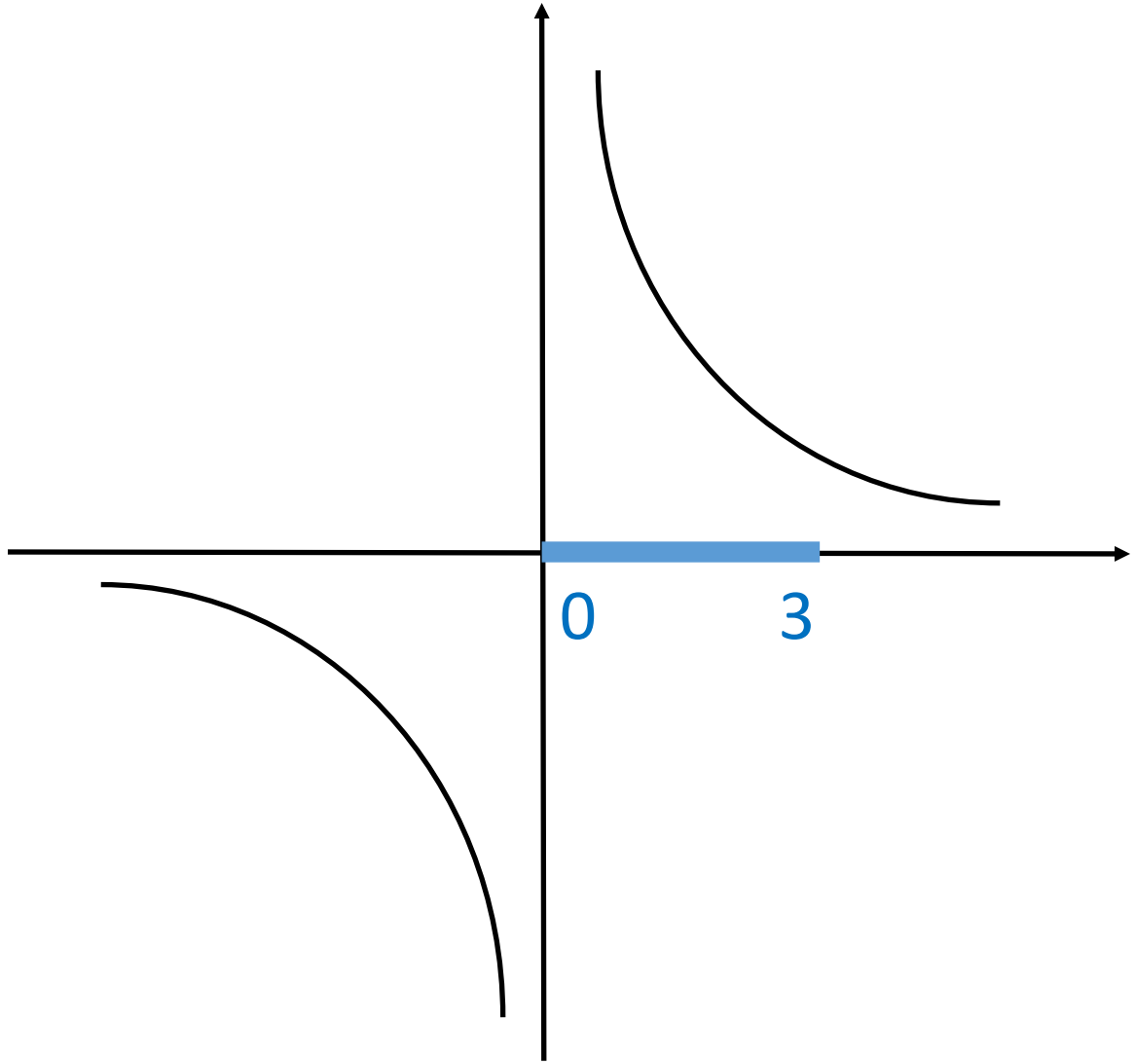
tracé à main levée sans échelle

en respectant :

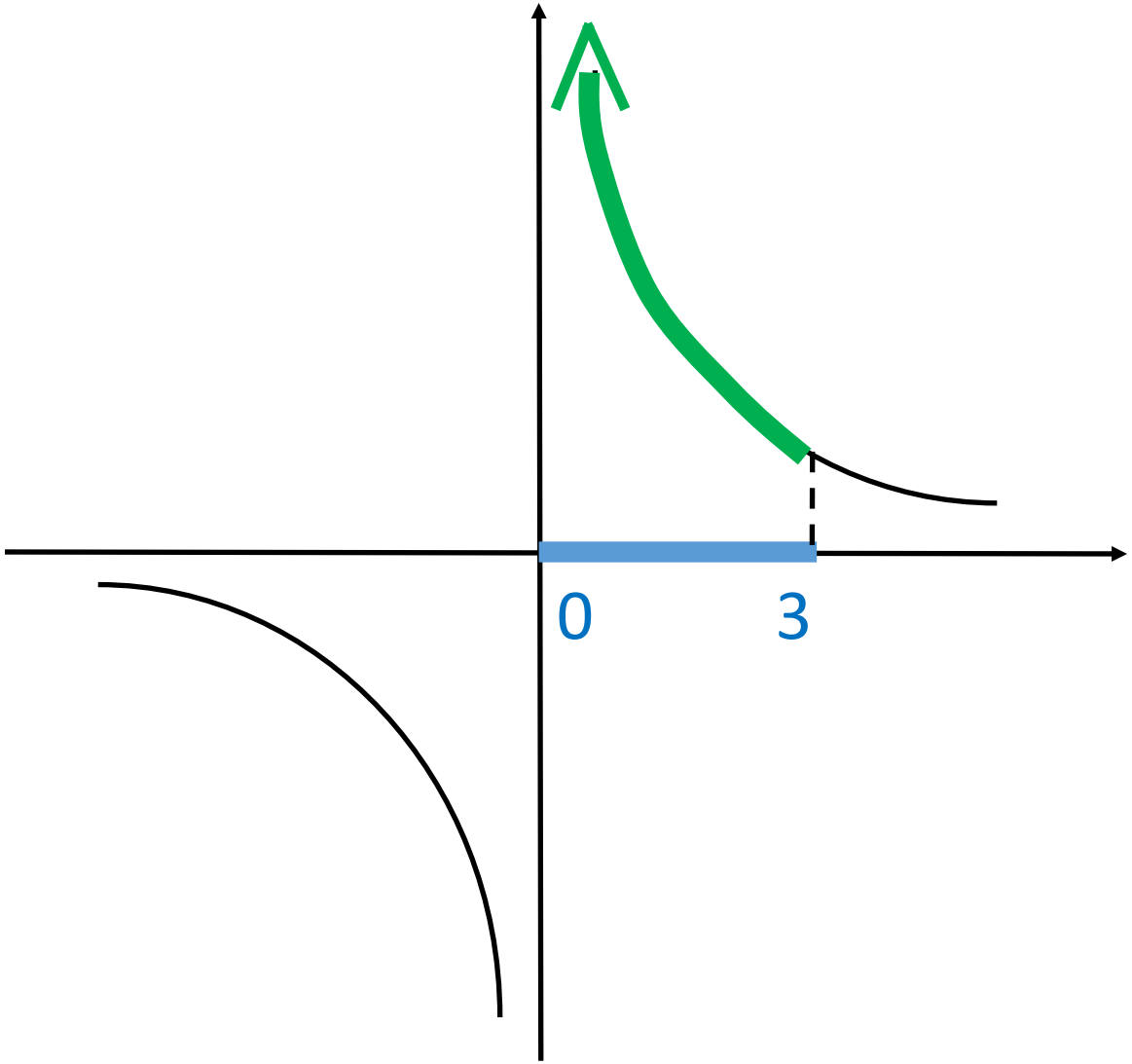
deux décroissances et

la courbe se rapproche des axes sans les toucher

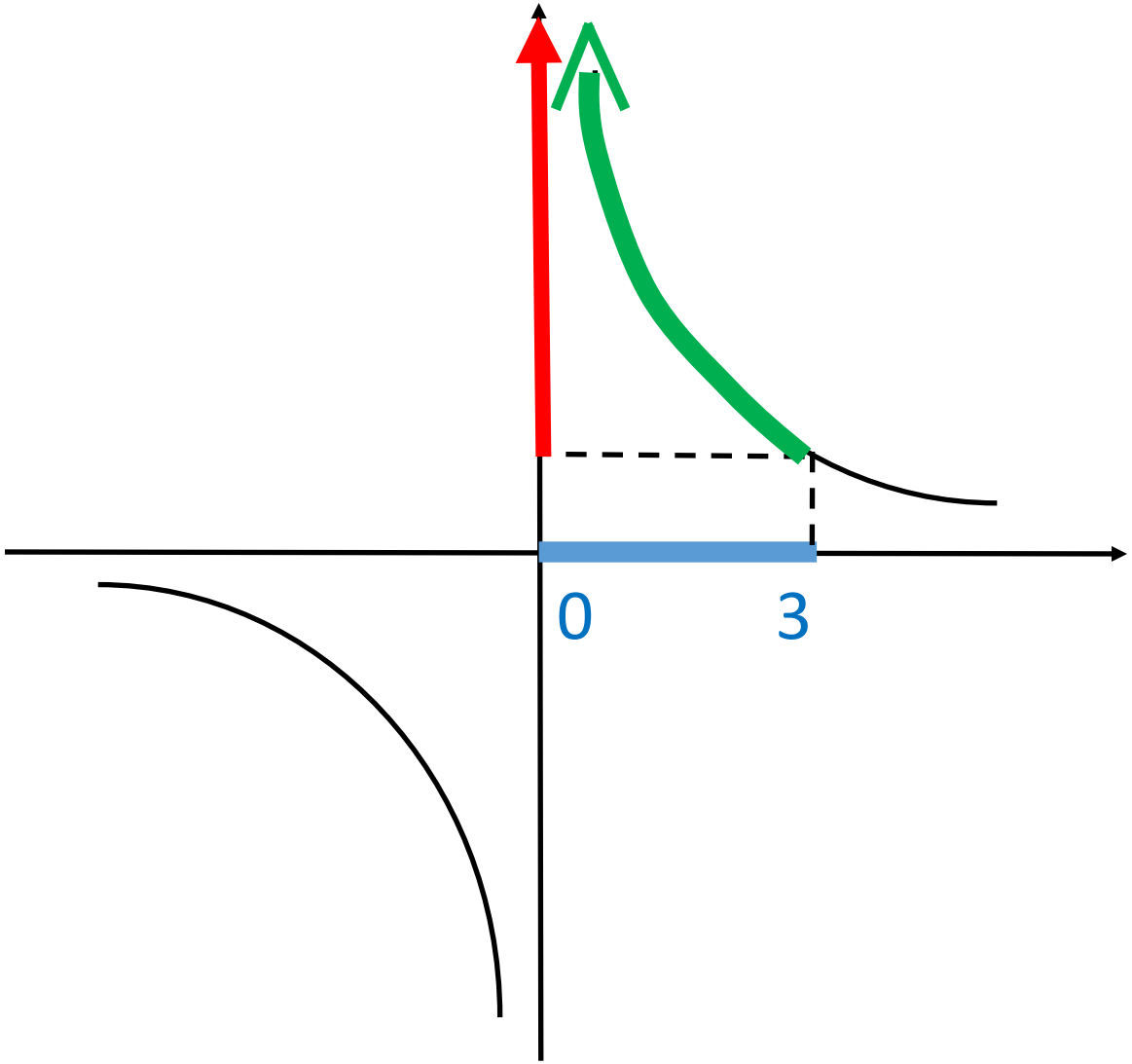
1°) $0 < x \leq 3$ donne $1/x$ … ?



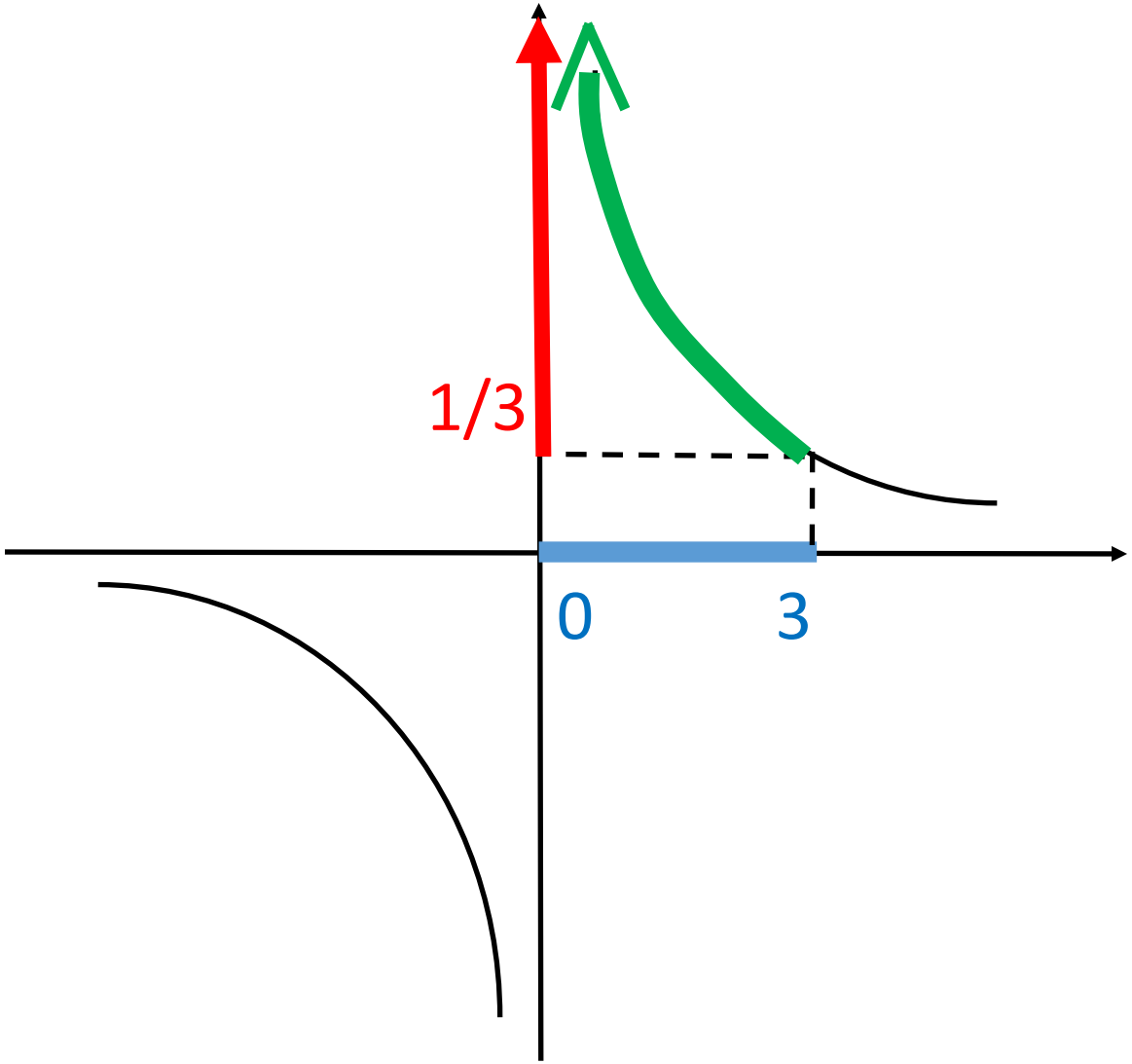
1°) $0 < x \leq 3$ donne $1/x$ … ?



1°) $0 < x \leq 3$ donne $1/x$ … ?

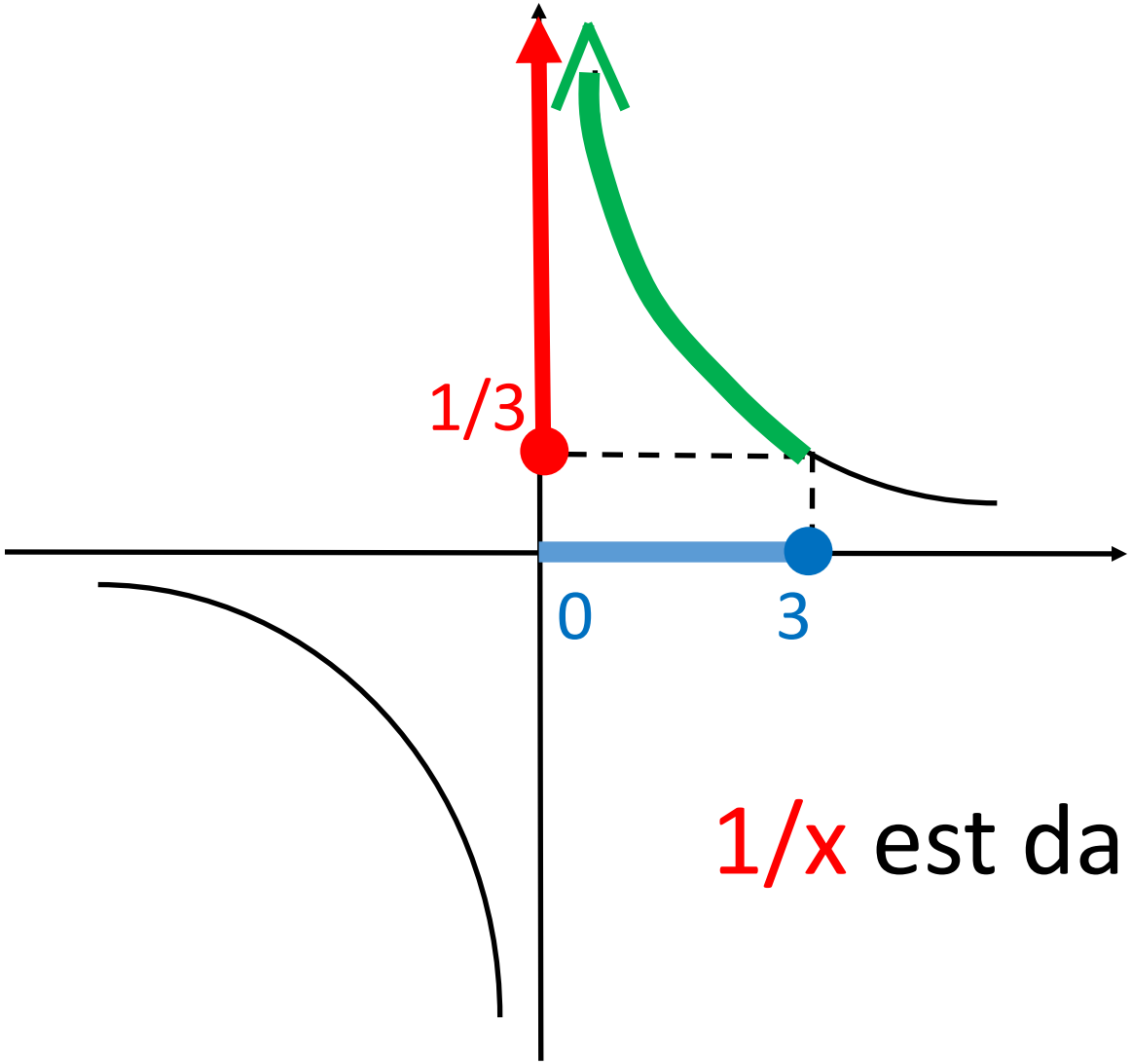


1°) $0 < x \leq 3$ donne $1/x$ … ?



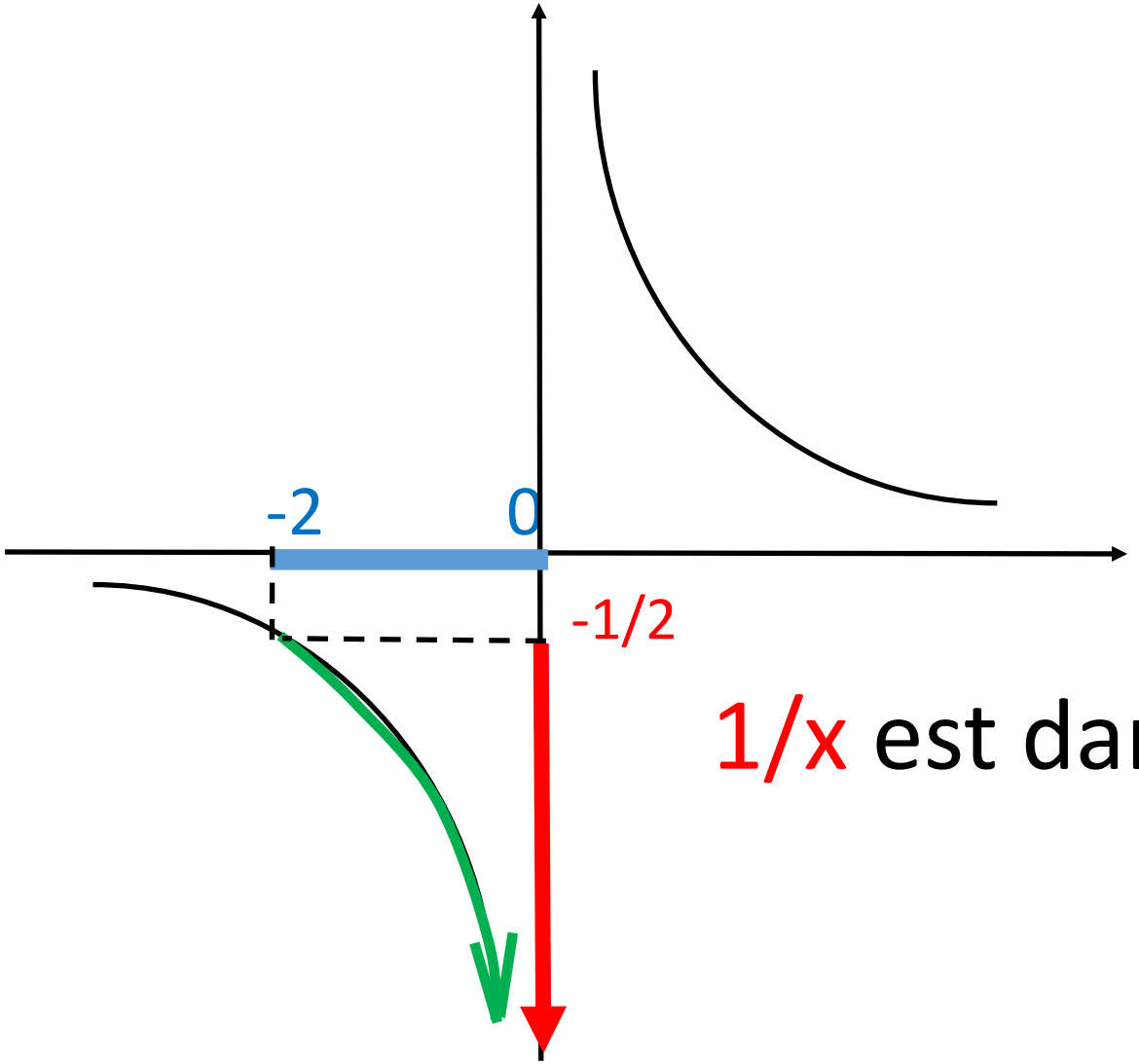
$x \mapsto 1/x$ donc $3 \mapsto 1/3$

1°) $0 < x \leq 3$ donne $1/x$ … ?



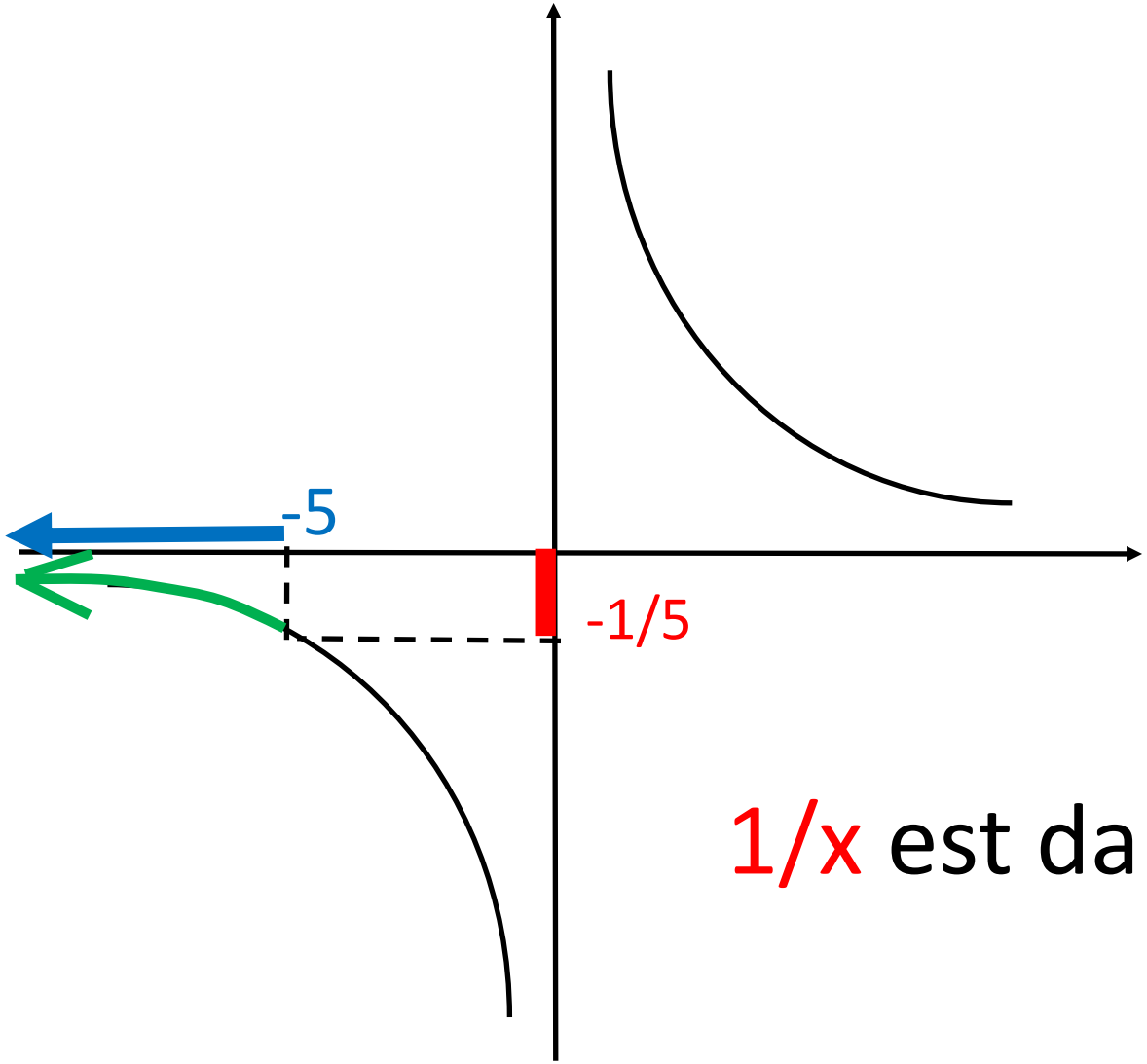
$1/x$ est dans $[\ 1/3\ ;\ +\infty\ [$

2°) - 2 < x < 0 donne 1/x … ?



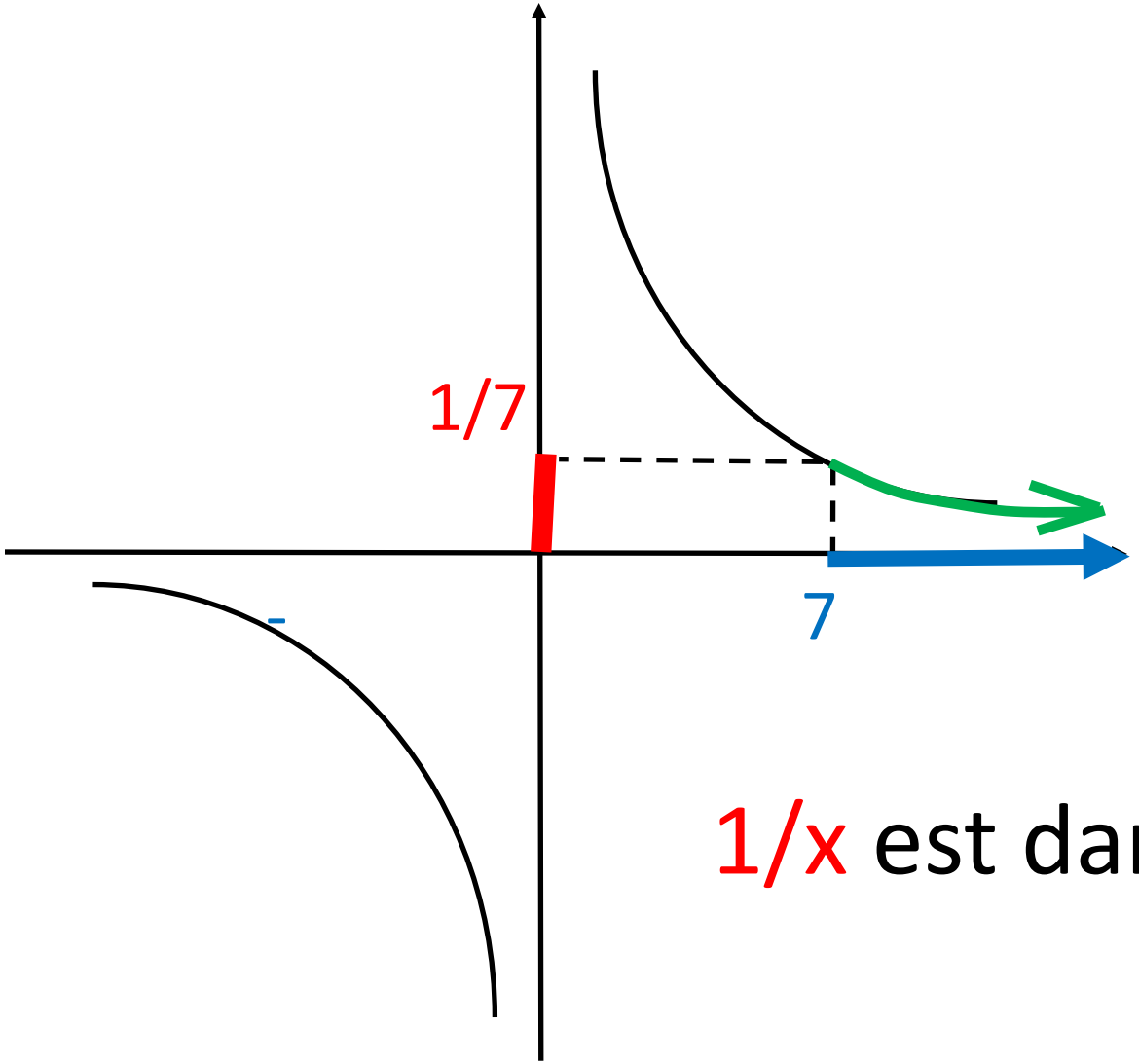
1/x est dans] - ∞ ; - ½ [

3°) $x < -5$ donne $1/x$ … ?



$1/x$ est dans $]-1/5 ; 0[$

4°) $x \geq 7$ donne $1/x$ … ?



$1/x$ est dans $]\ 0\ ;\ 1/7\ ]$

Exercice 2 bis :

$$\frac{1}{x} \geq 0{,}5$$

A quel ensemble appartient x ?

Exercice 2 :

Déterminez à quel ensemble appartient x dans les cas suivants :

1°) $1/x > 10$ et $x > 1/100$

2°) $1/x \leq 100$ et $0 < x < 1$

3°) $1/x \leq -0,25$ et $x < -3$

4°) $-0,1 < 1/x < 0$ et $x \geq -50$

On pourra justifier par la visualisation graphique des propriétés (sur 4 schémas différents).

Exercice 15 :

Déterminez à quel ensemble appartient x :

1°) $\frac{1}{x} > 10$ et $x > \frac{1}{100}$

Méthode :

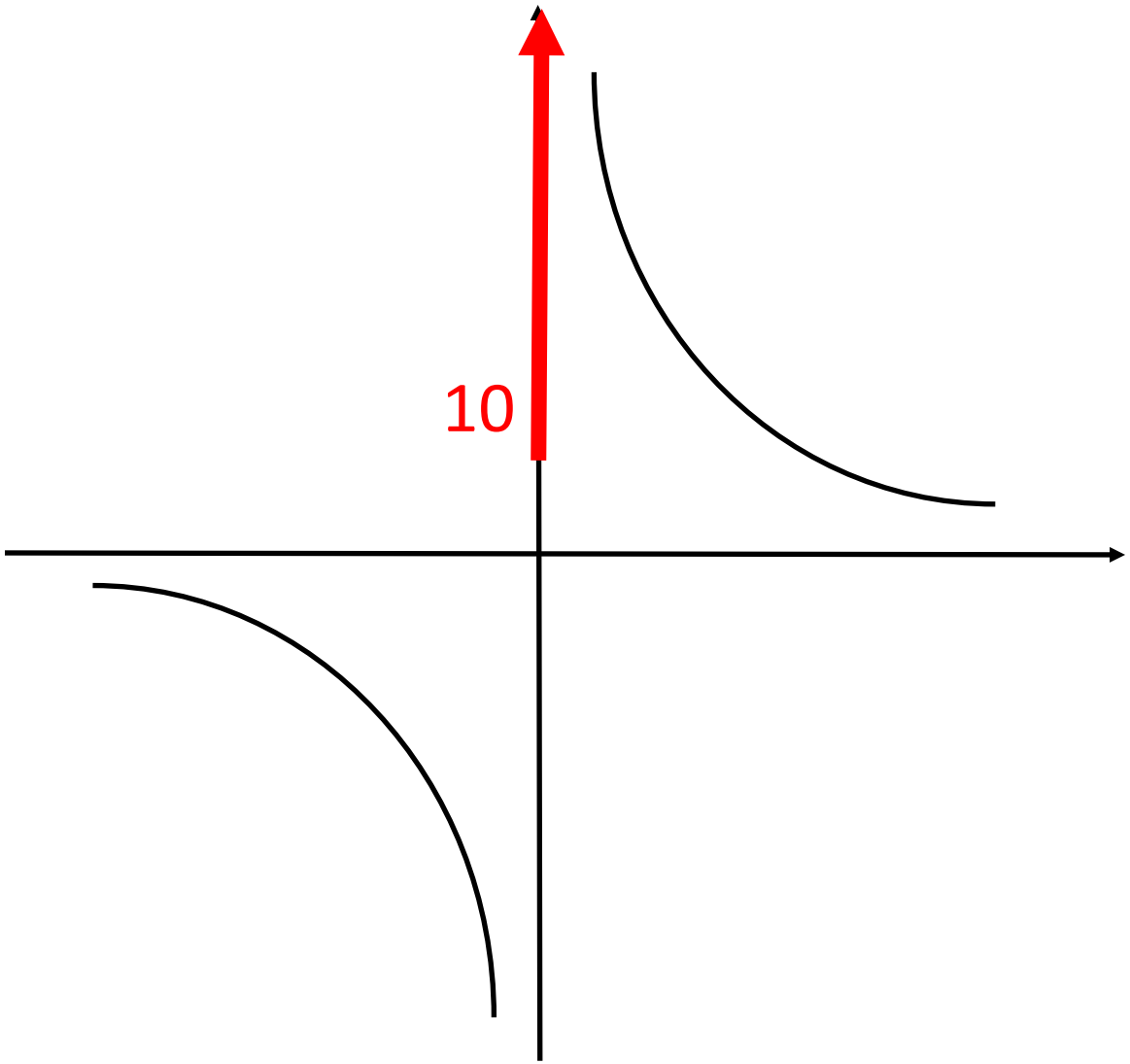
$\frac{1}{x} > 10$ nous donne les x correspondants

(c'est l'exo 1 dans l'autre sens).

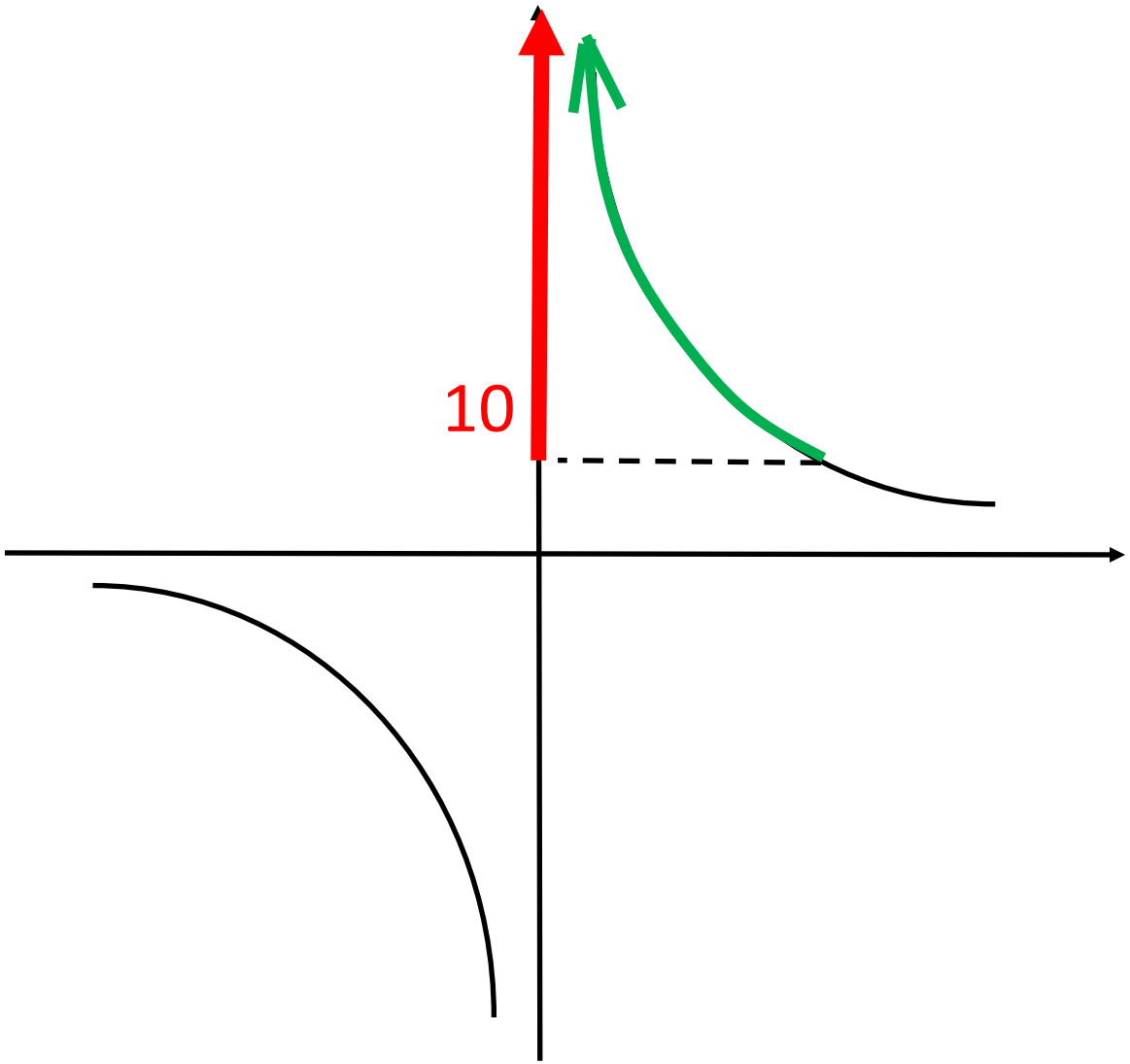
L'intersection avec $x > \frac{1}{100}$

nous donne les x solutions.

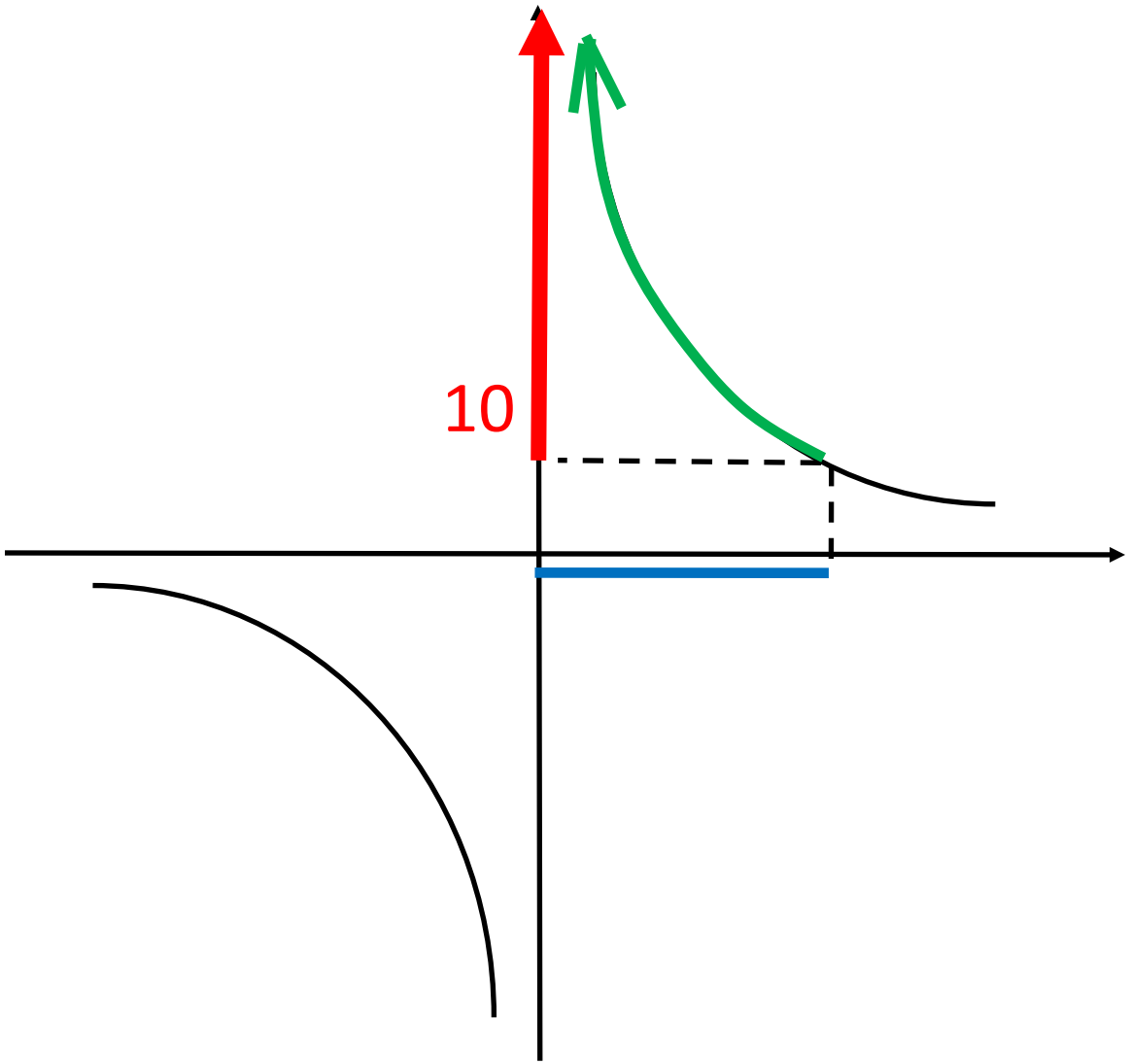
1°) $1/x > 10$



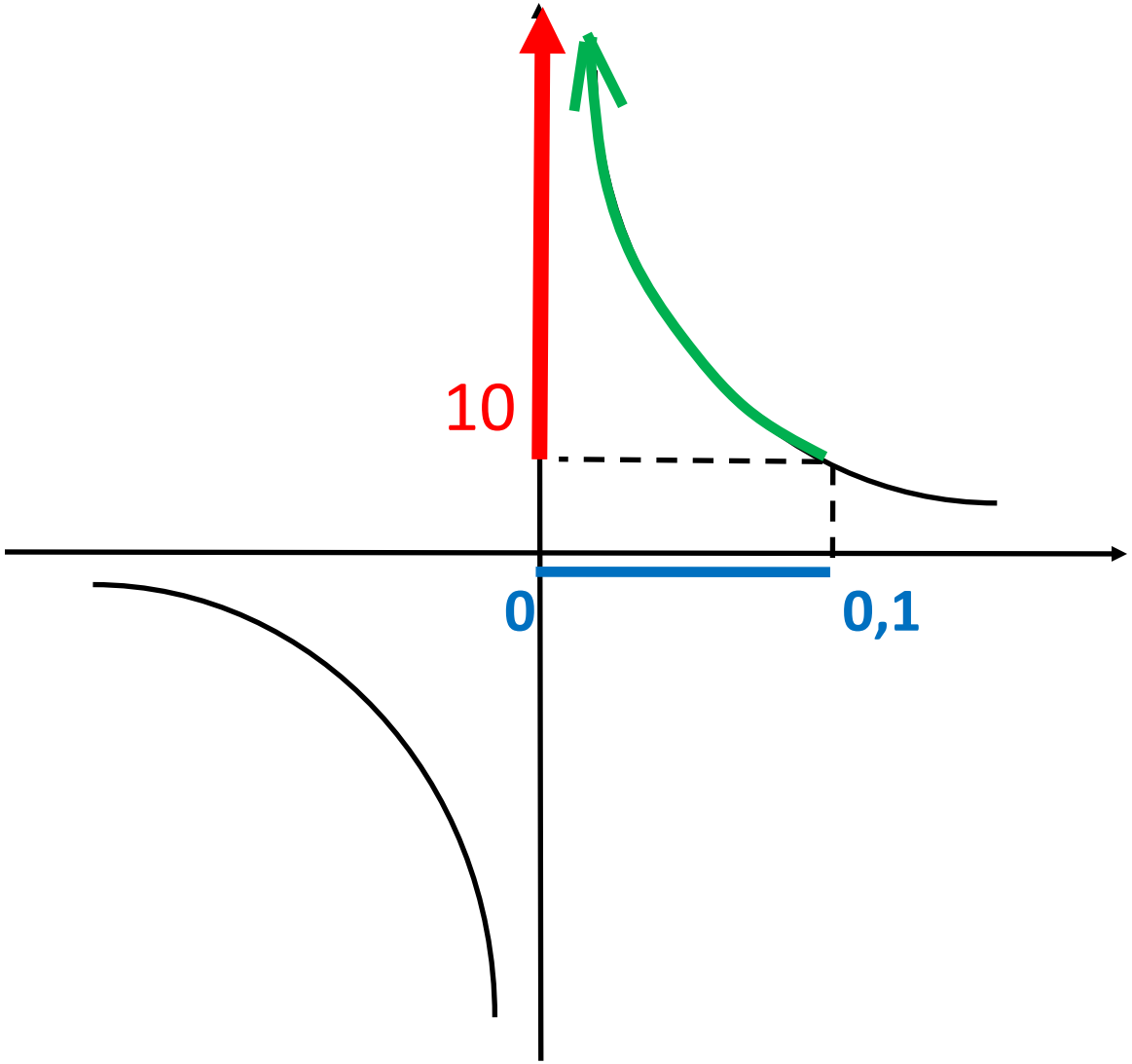
1°) $1/x > 10$



1°) $1/x > 10$

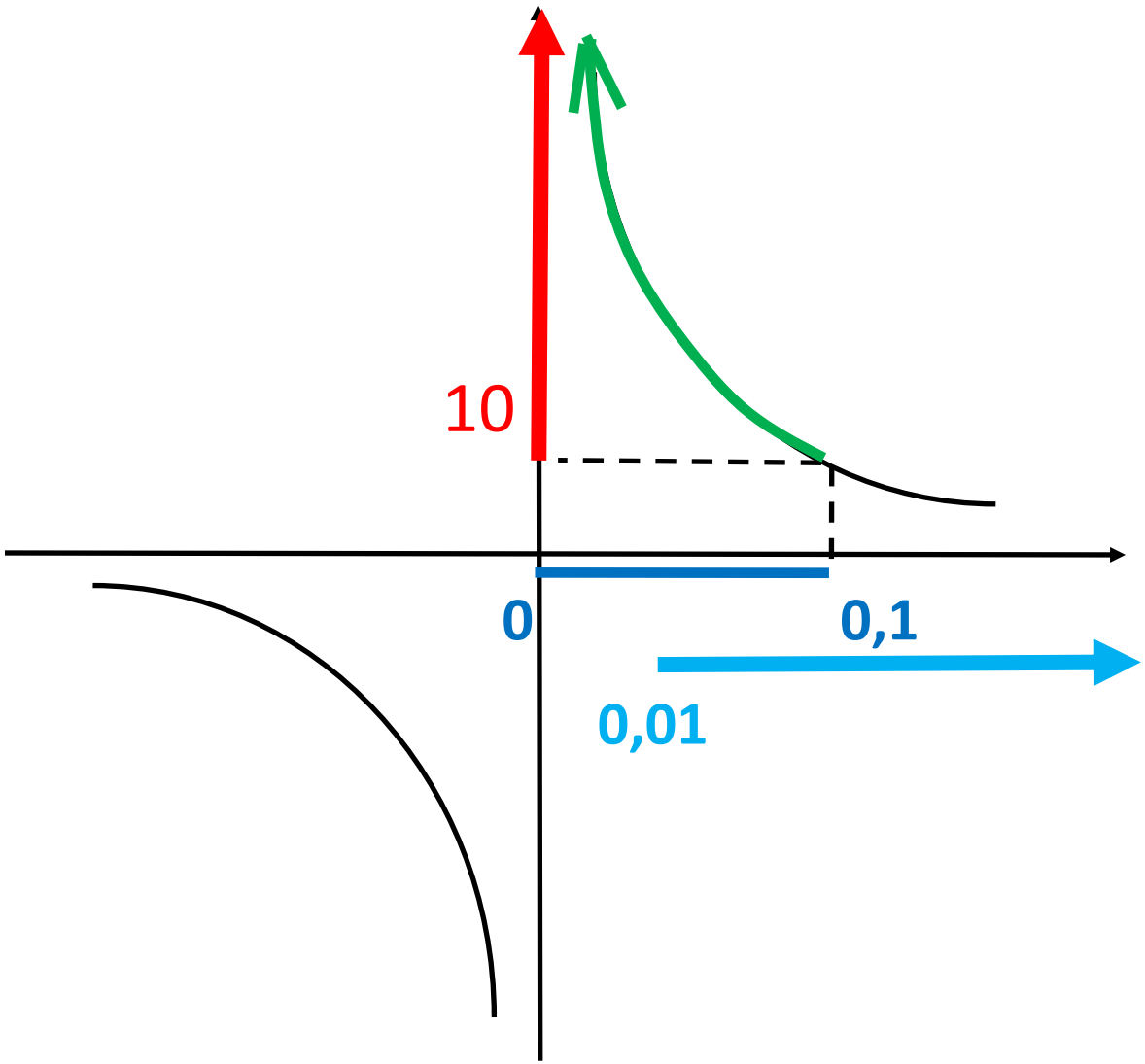


1°) $1/x > 10$

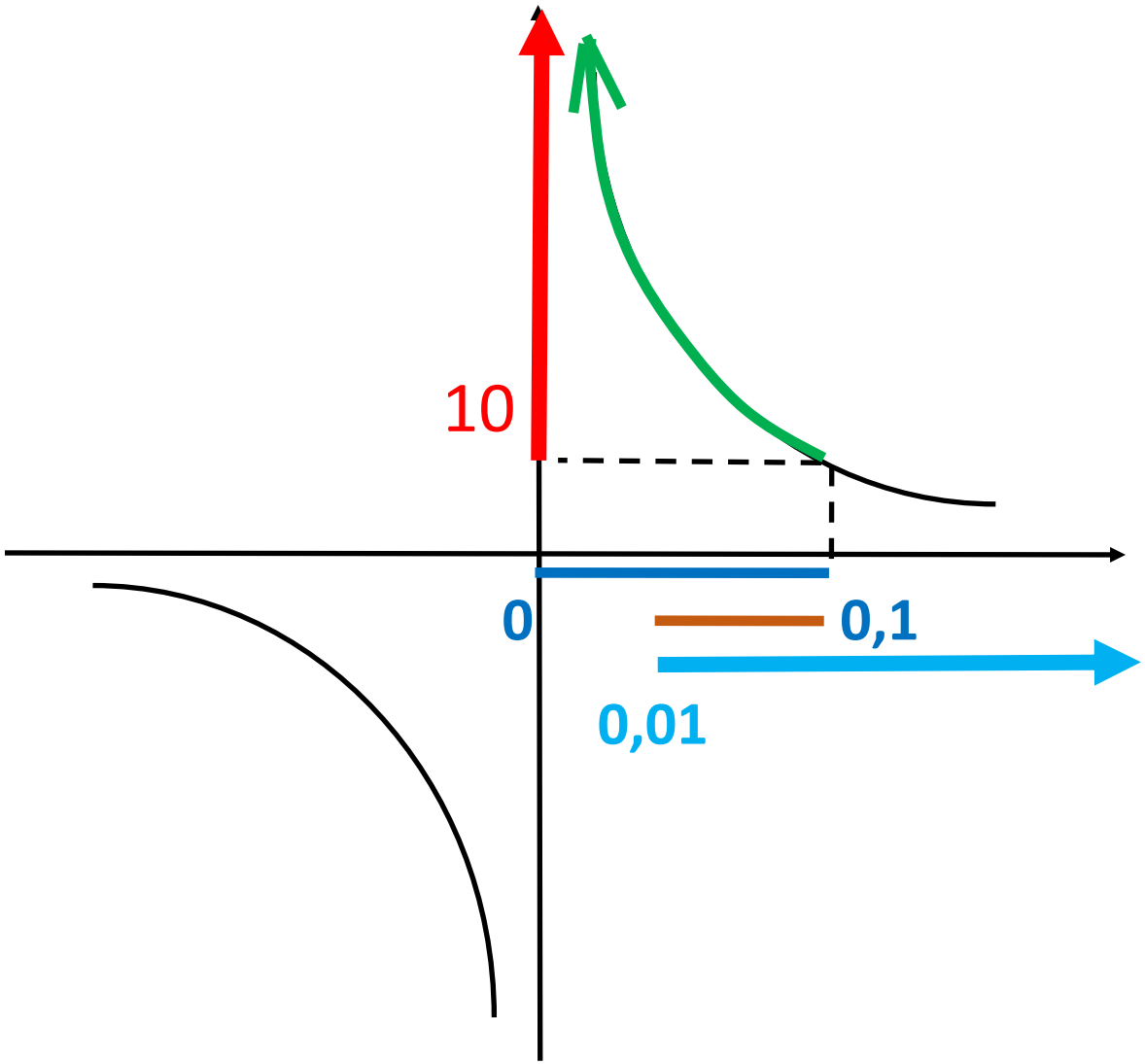


$$\frac{1}{x} = 10 \iff 1 = 10\,x \iff x = \frac{1}{10} = 0{,}1$$

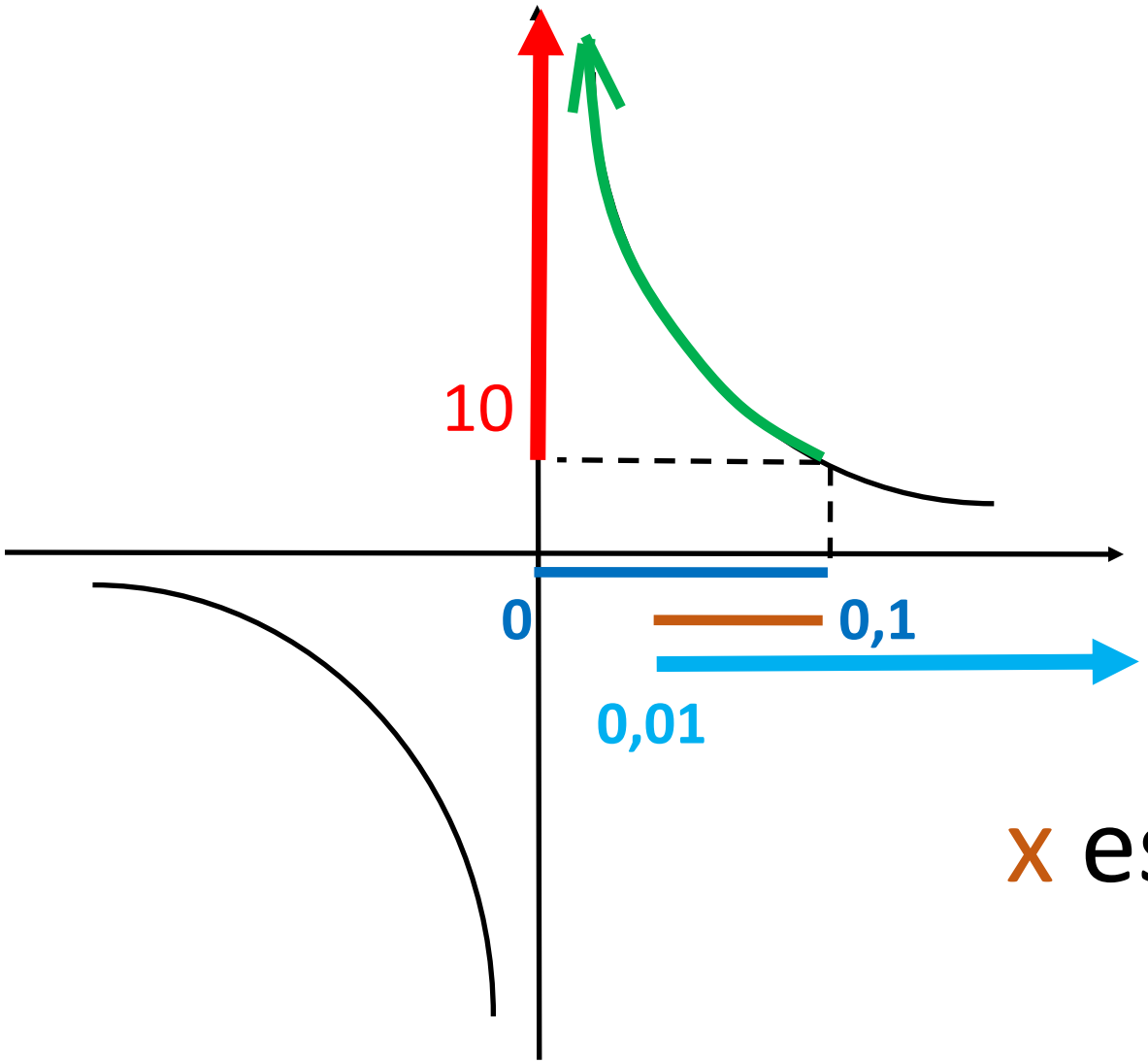
1°) $1/x > 10$ et $x > 1/100$



1°) $1/x > 10$ et $x > 1/100$

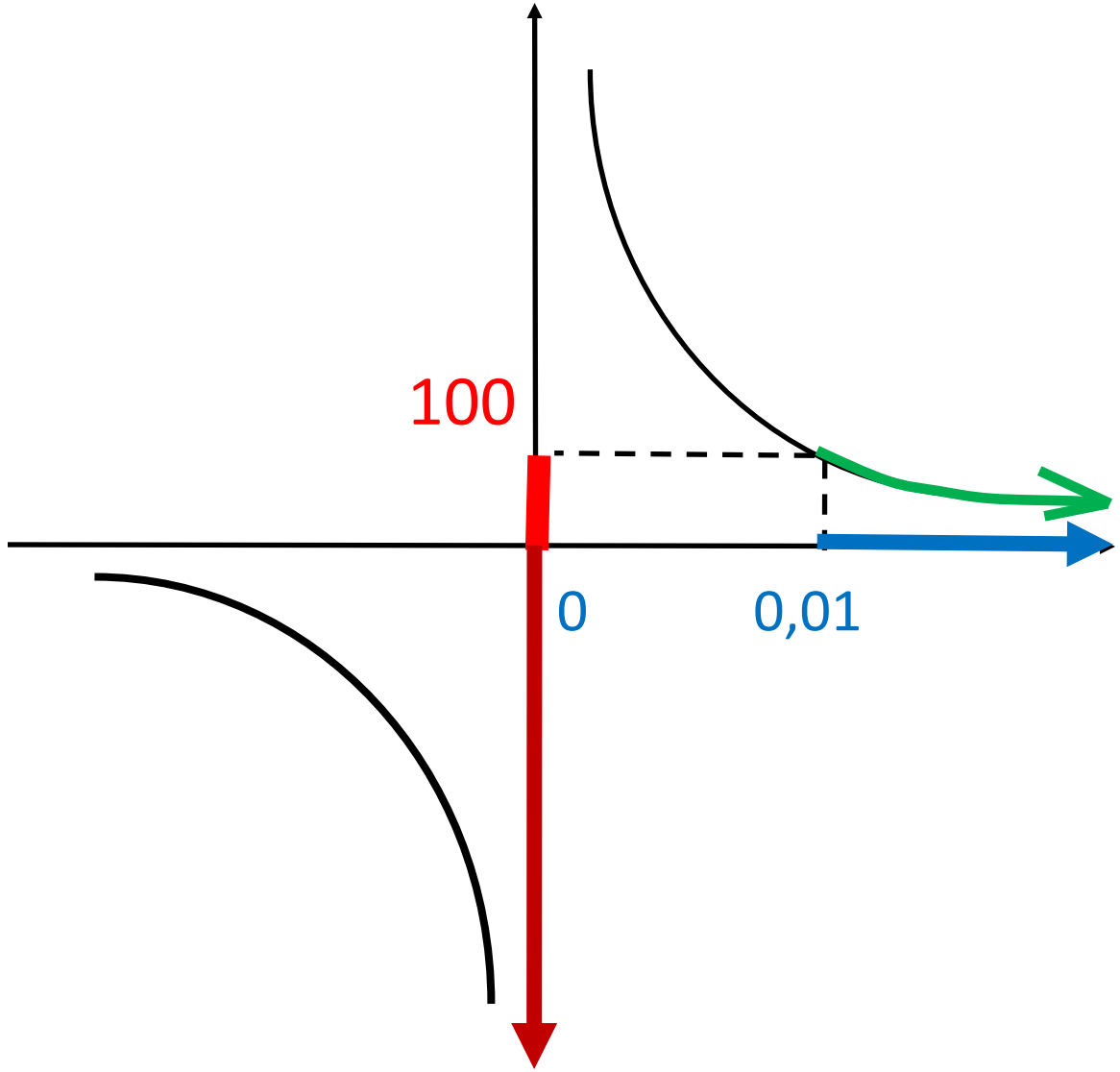


1°) $1/x > 10$ et $x > 1/100$

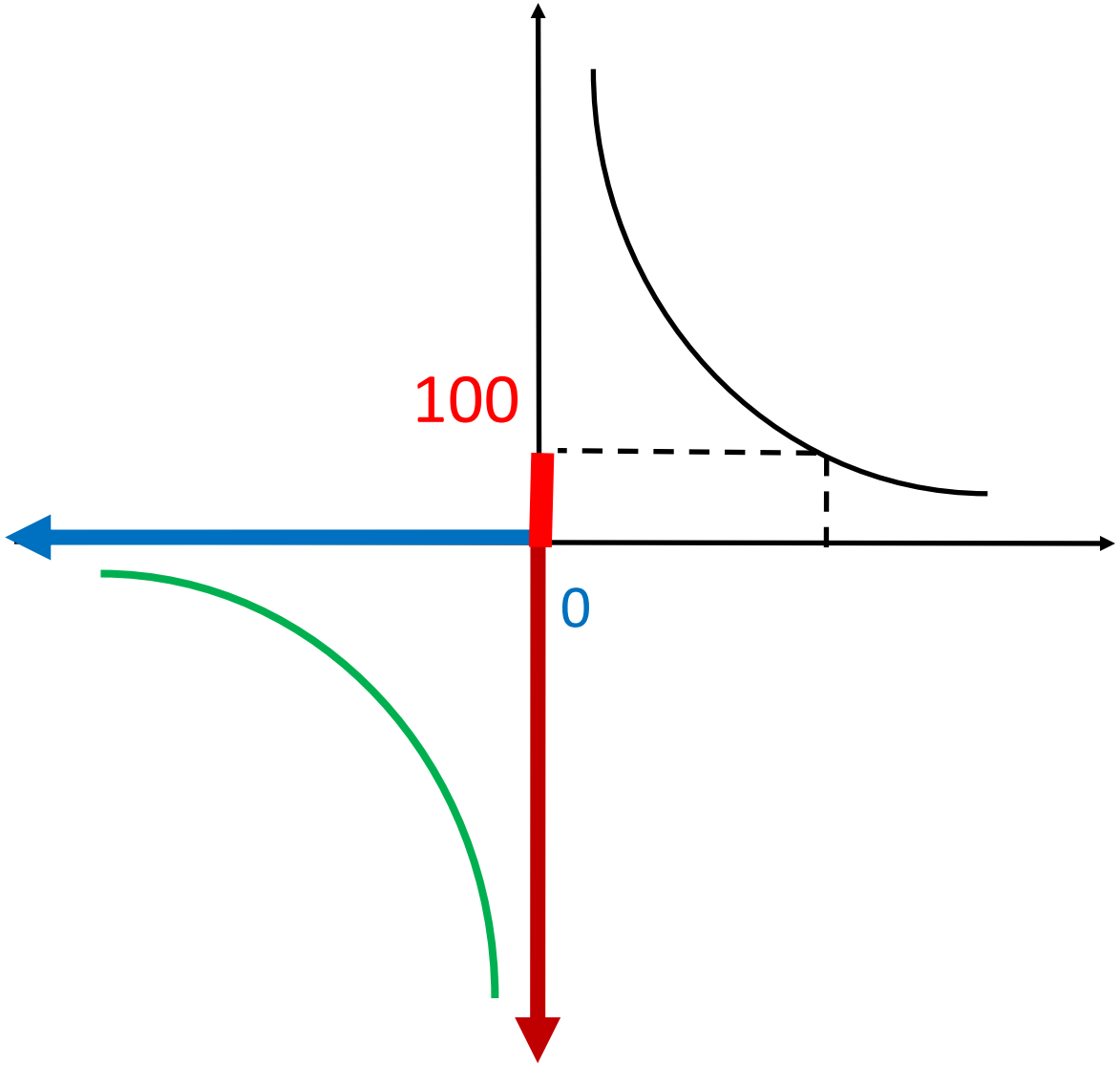


x est dans] 0,01 ; 0,1 [

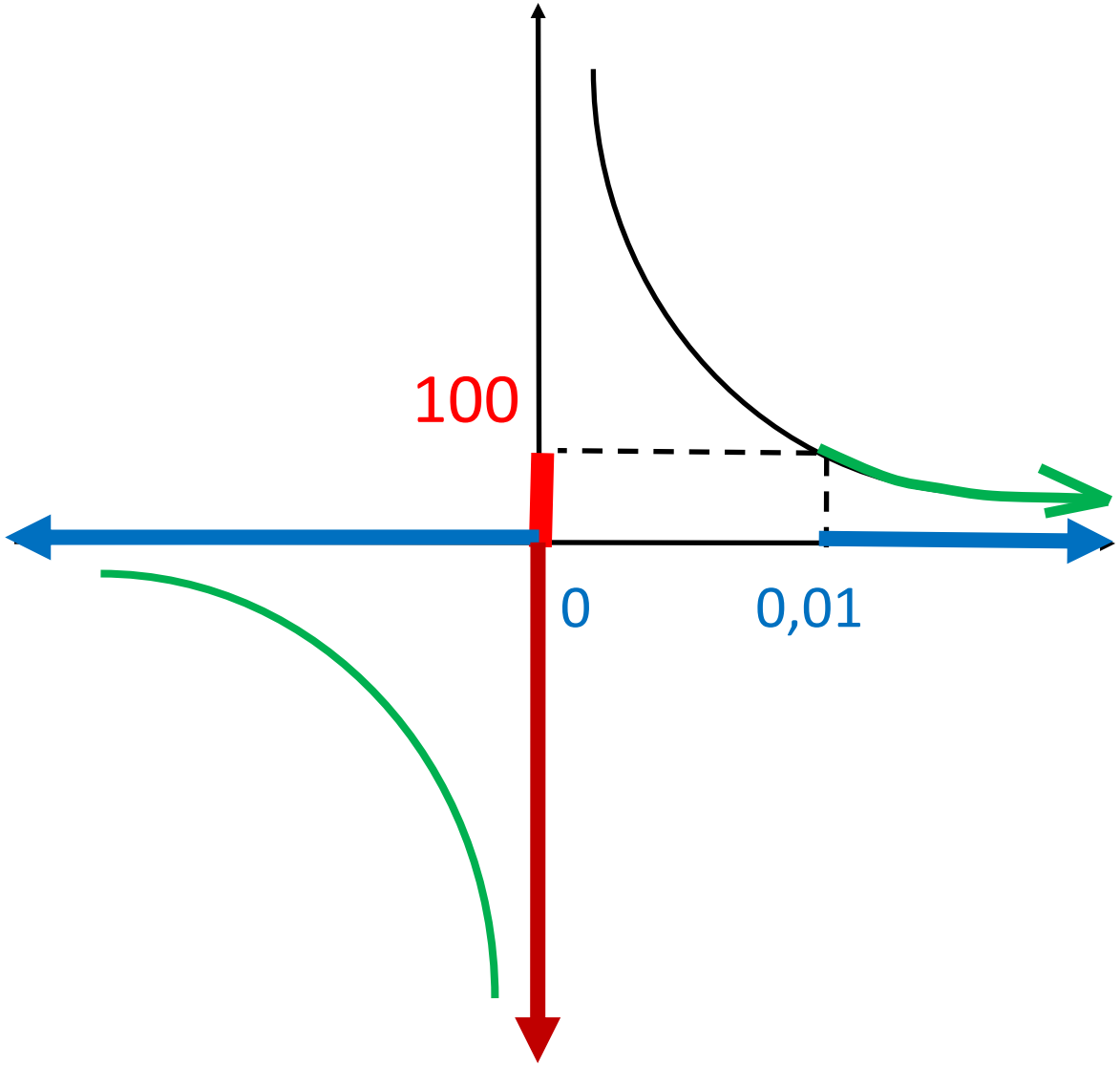
2°) $1/x \leq 100$ et x positif ($1/x \neq 0$)



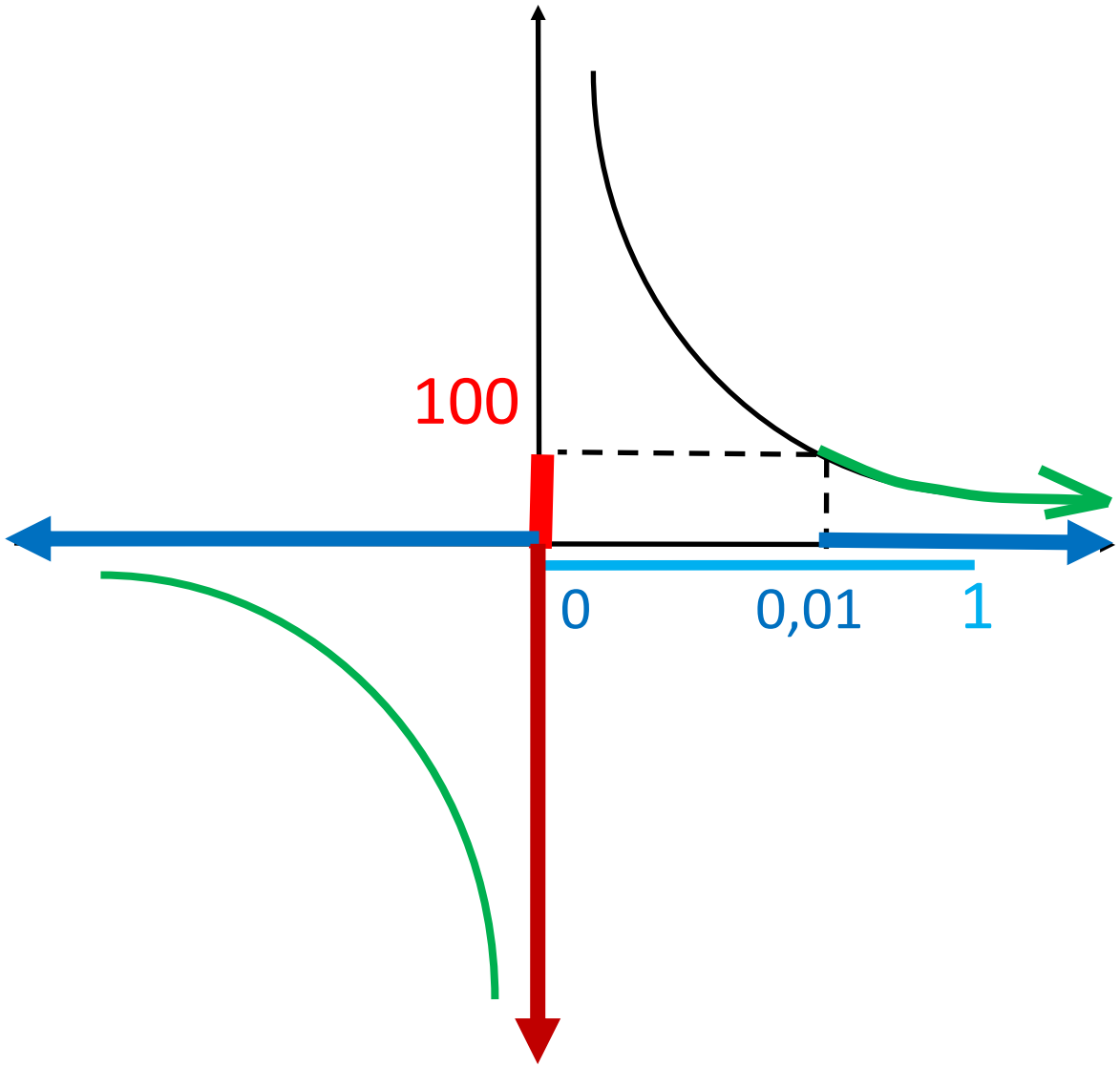
2°) $1/x \leq 100$ et x négatif ($1/x \neq 0$)



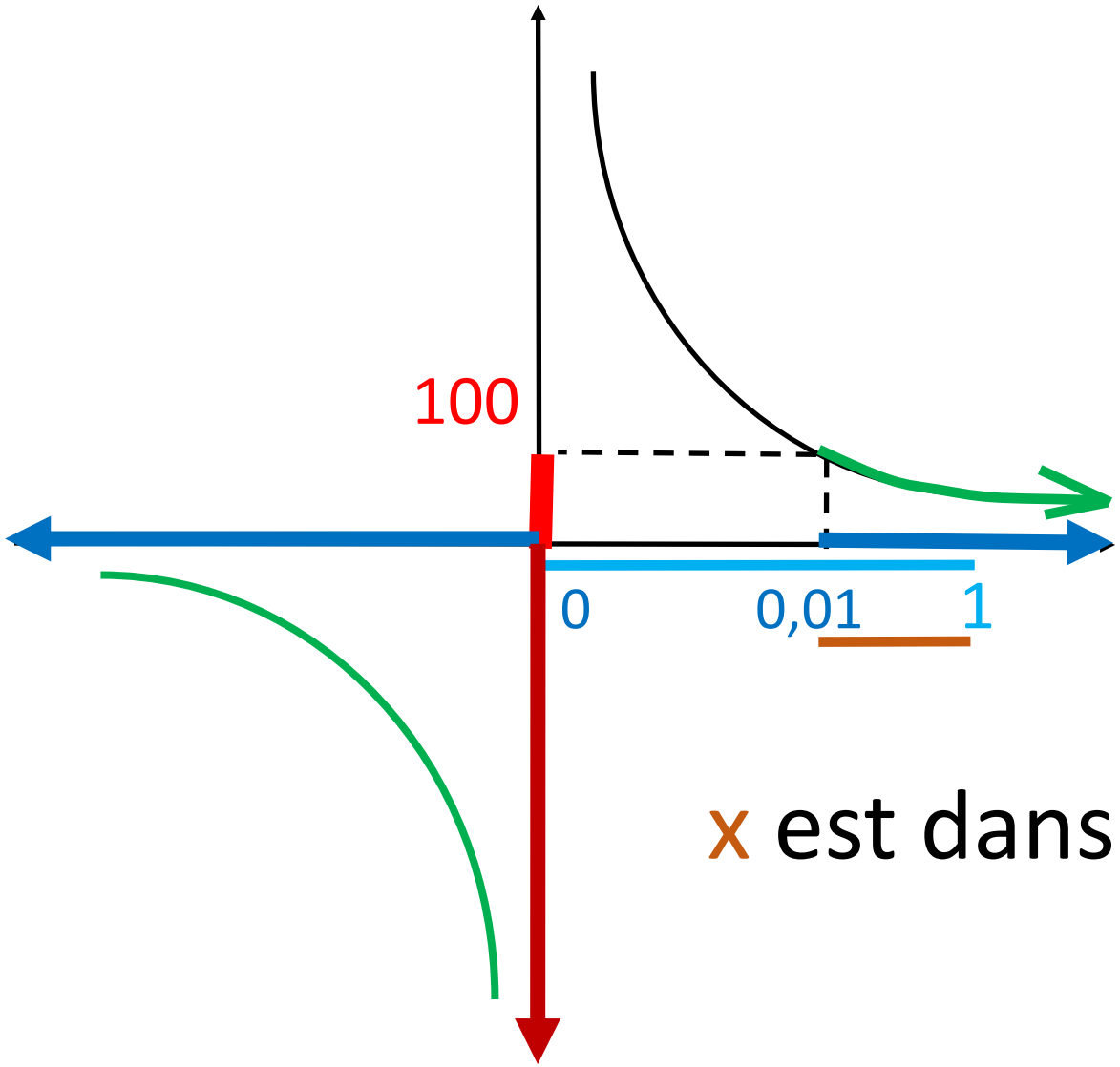
2°) $1/x \leq 100$ (et $1/x \neq 0$) et $x \neq 0$



2°) $1/x \leq 100$ et $0 < x < 1$

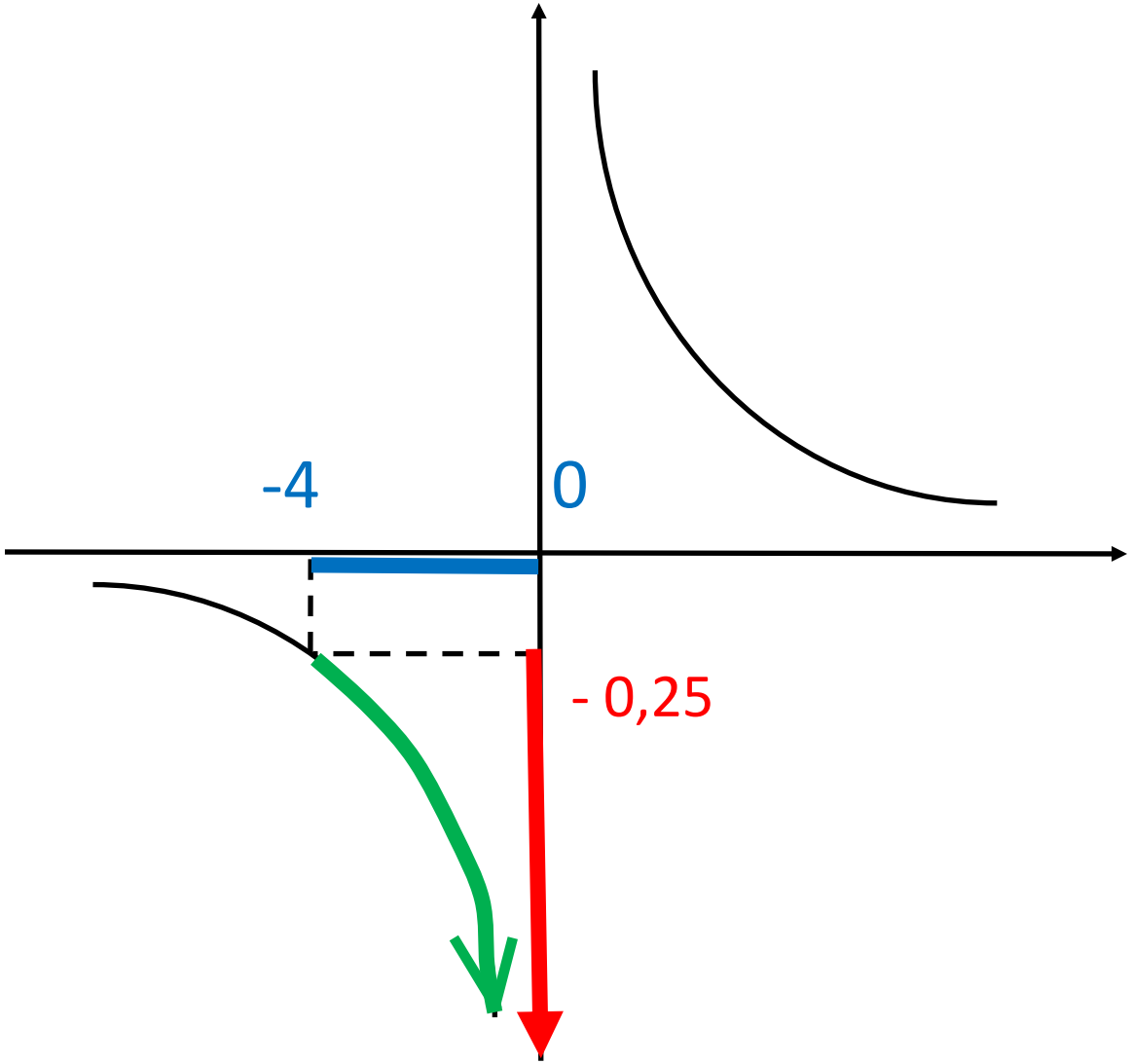


2°) $1/x \leq 100$ et $0 < x < 1$

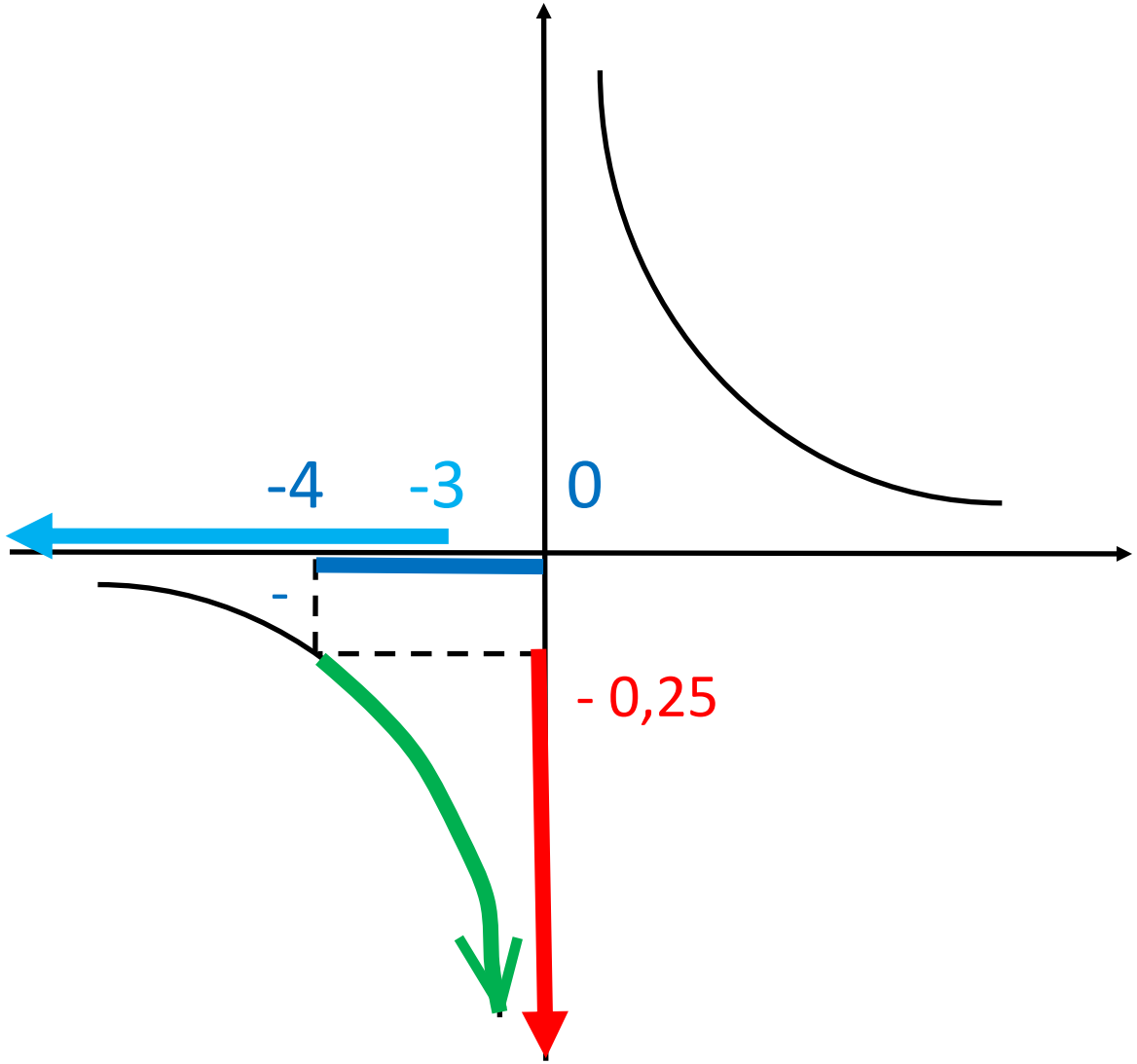


x est dans [0,01 ; 1 [

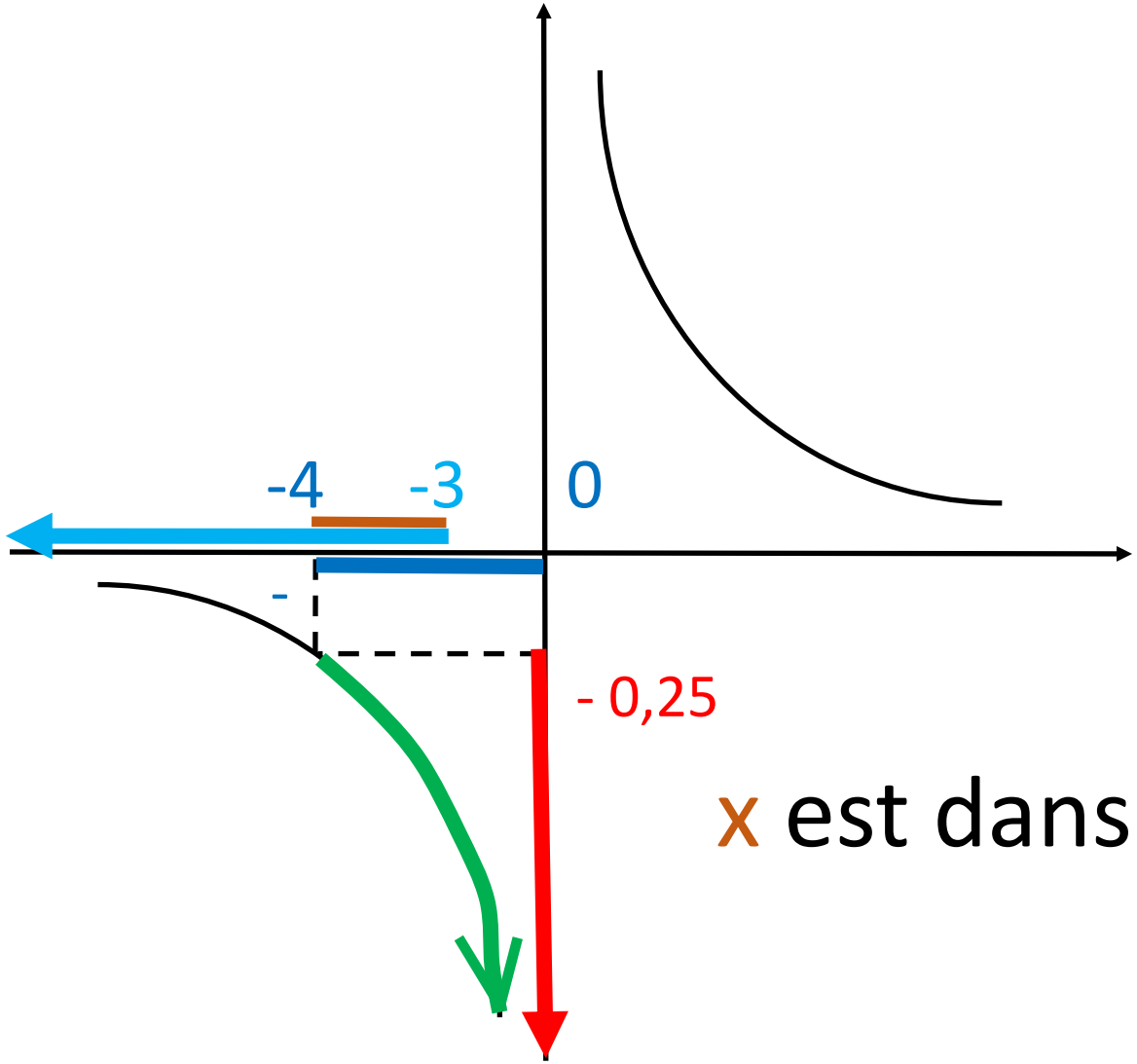
3°) $1/x \leq -0,25$



3°) $1/x \leq -0,25$ et $x < -3$

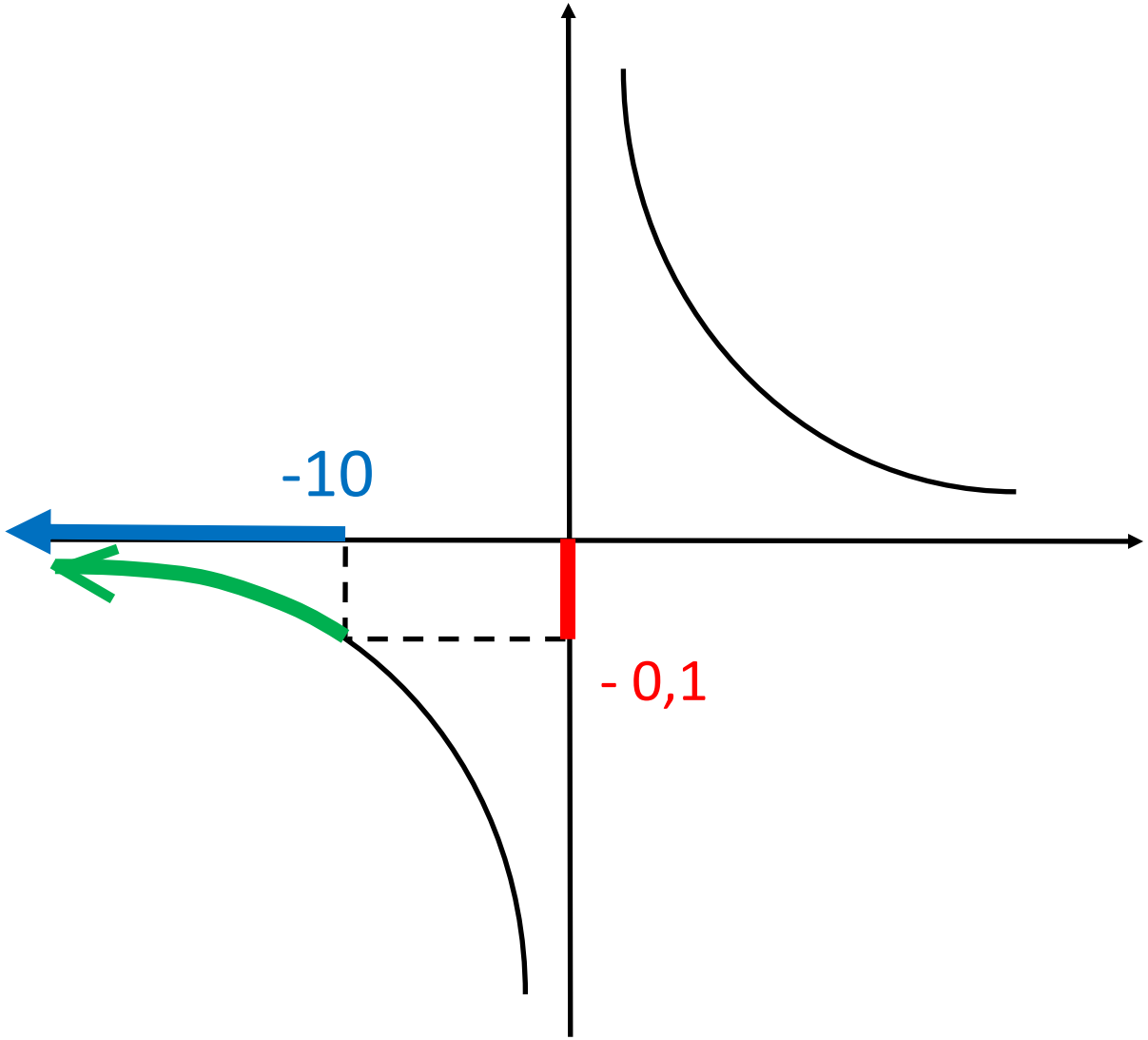


3°) $1/x \leq -0,25$ et $x < -3$

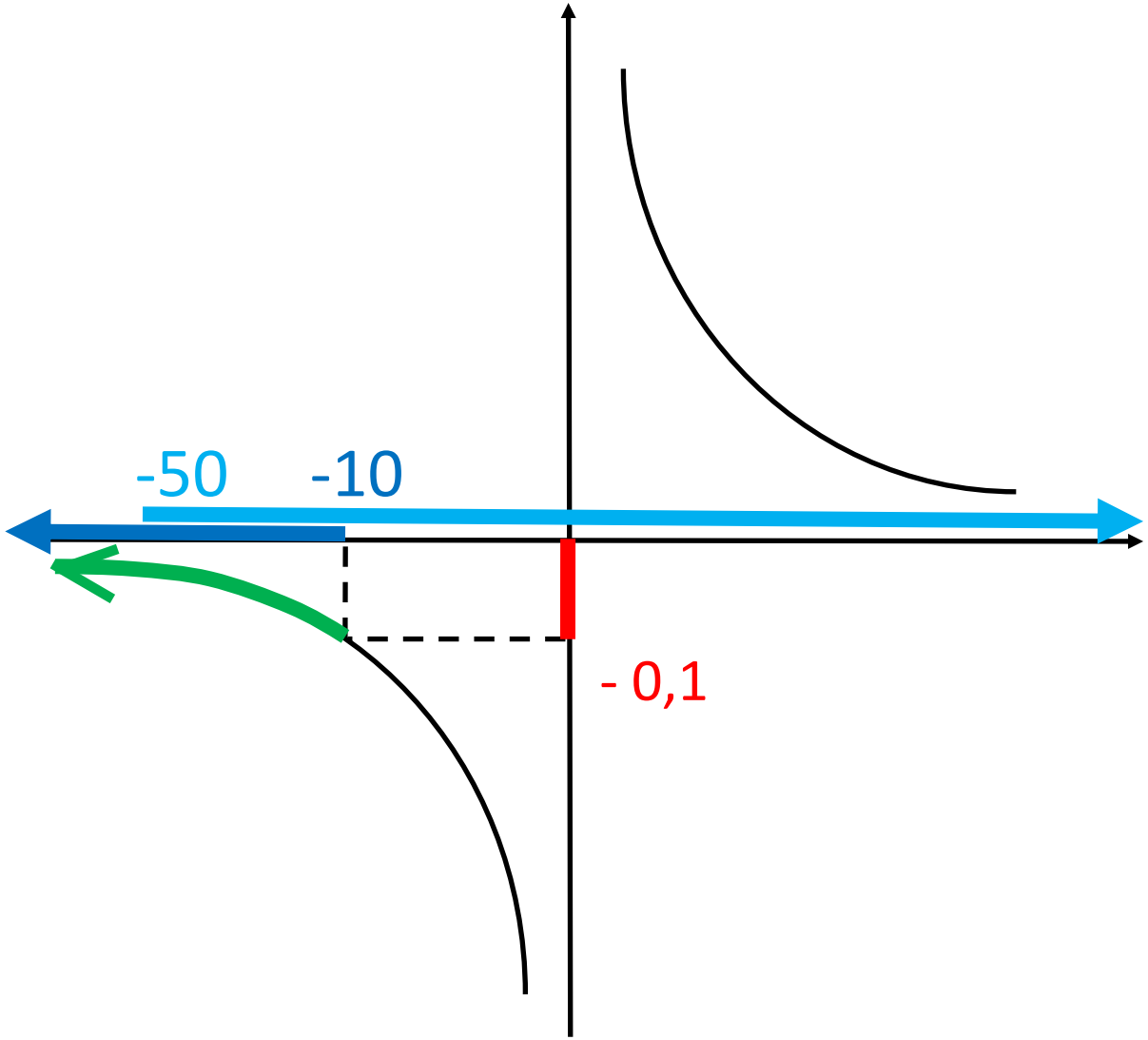


x est dans [- 4 ; - 3 [

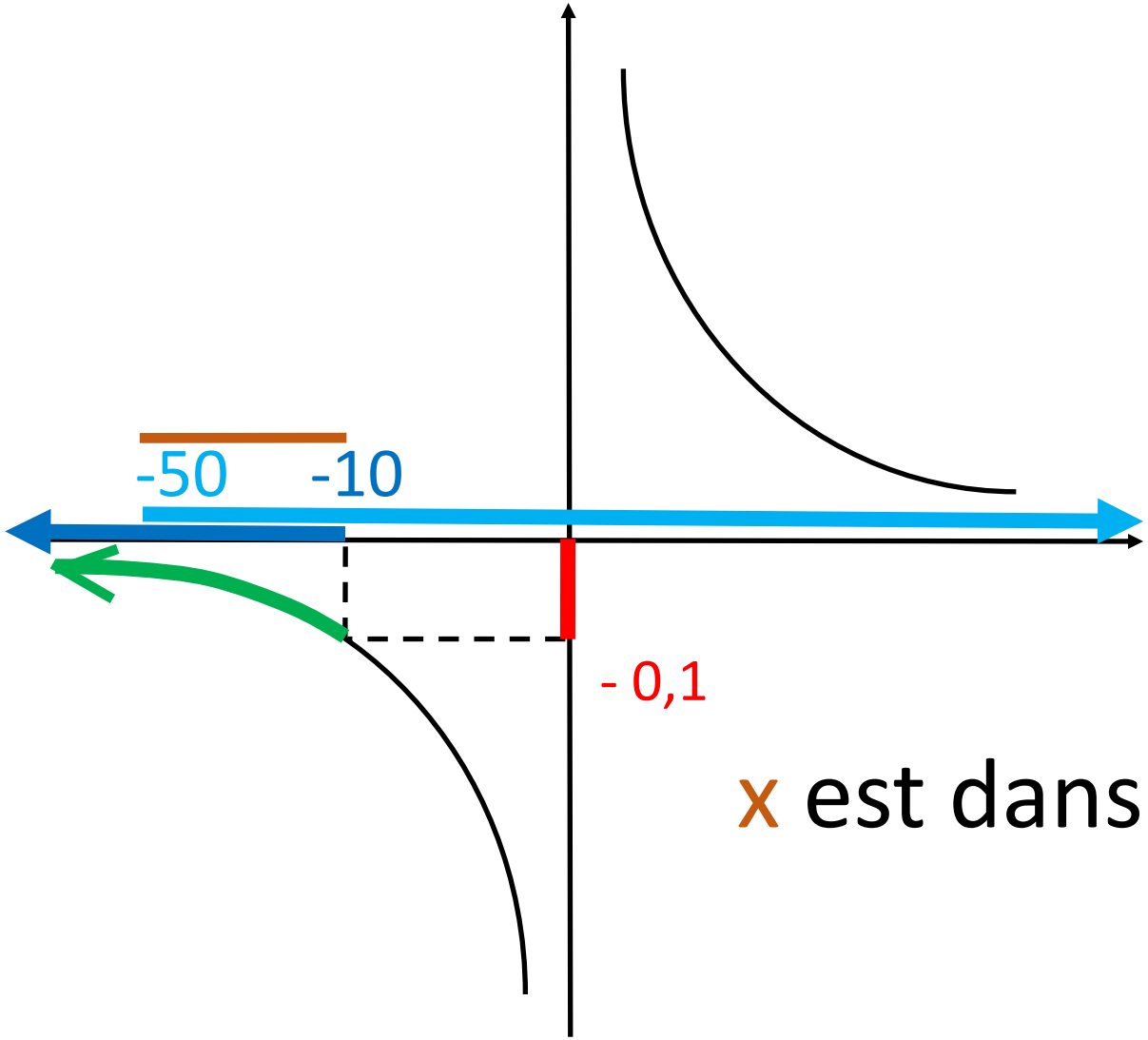
4°) - 0,1 < 1/x < 0



4°) $-0,1 < \frac{1}{x} < 0$ et $x \geq -50$



4°) $-0{,}1 < \frac{1}{x} < 0$ et $x \geq -50$



x est dans [- 50 ; - 10 [