TE de vendredi

ETUDE D'UNE FONCTION

- QUADRATIQUE
- HOMOGRAPHIQUE

AFFINE

GRAPHES

$D_f$

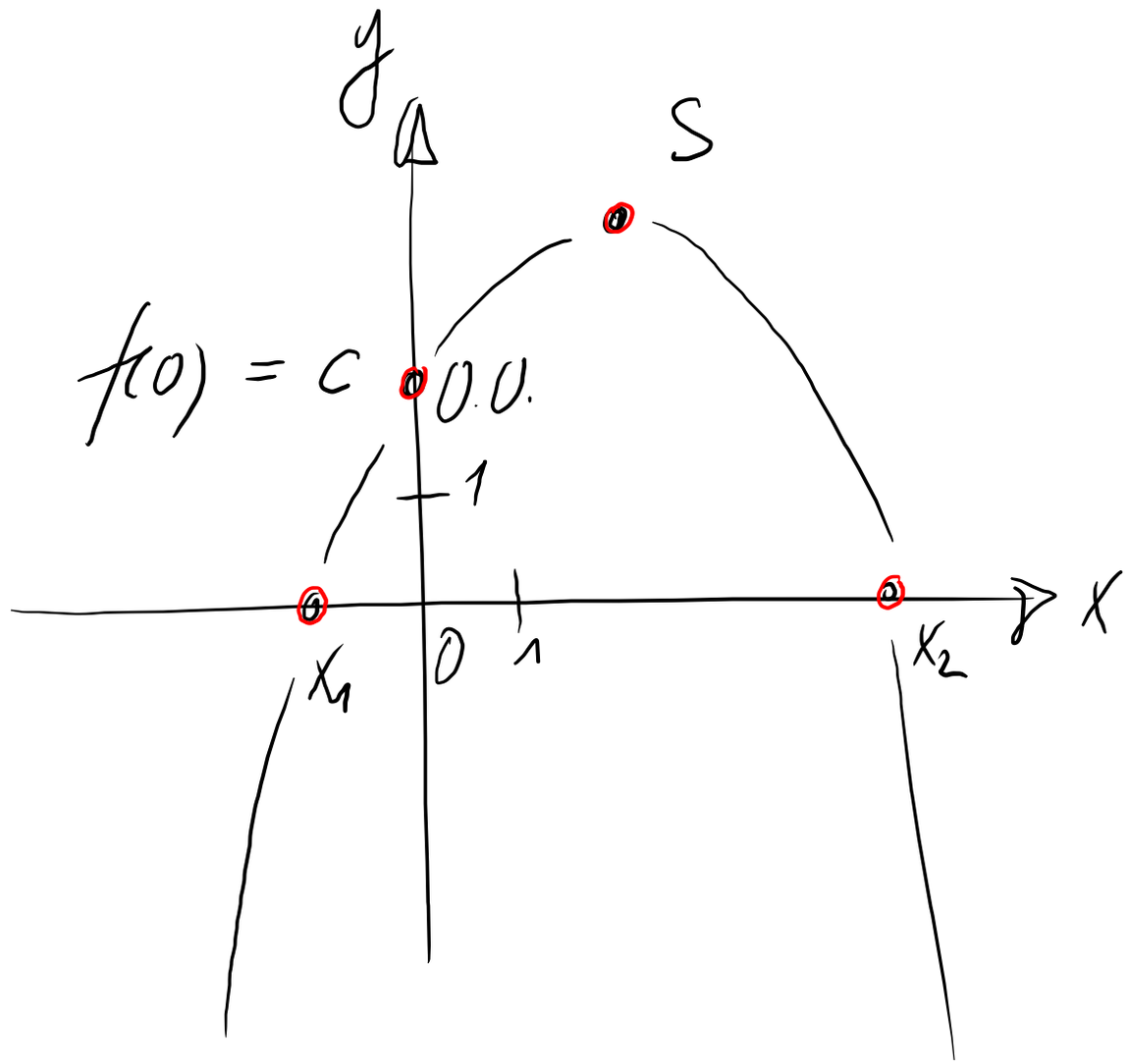
$$f(x) = ax^2 + bx + c$$

① $D_f = \mathbb{R}$

② Zeros / Signe

③ 0.0. / Sommet

④ Graphe



$$f(x) = \frac{ax+b}{cx+d}$$

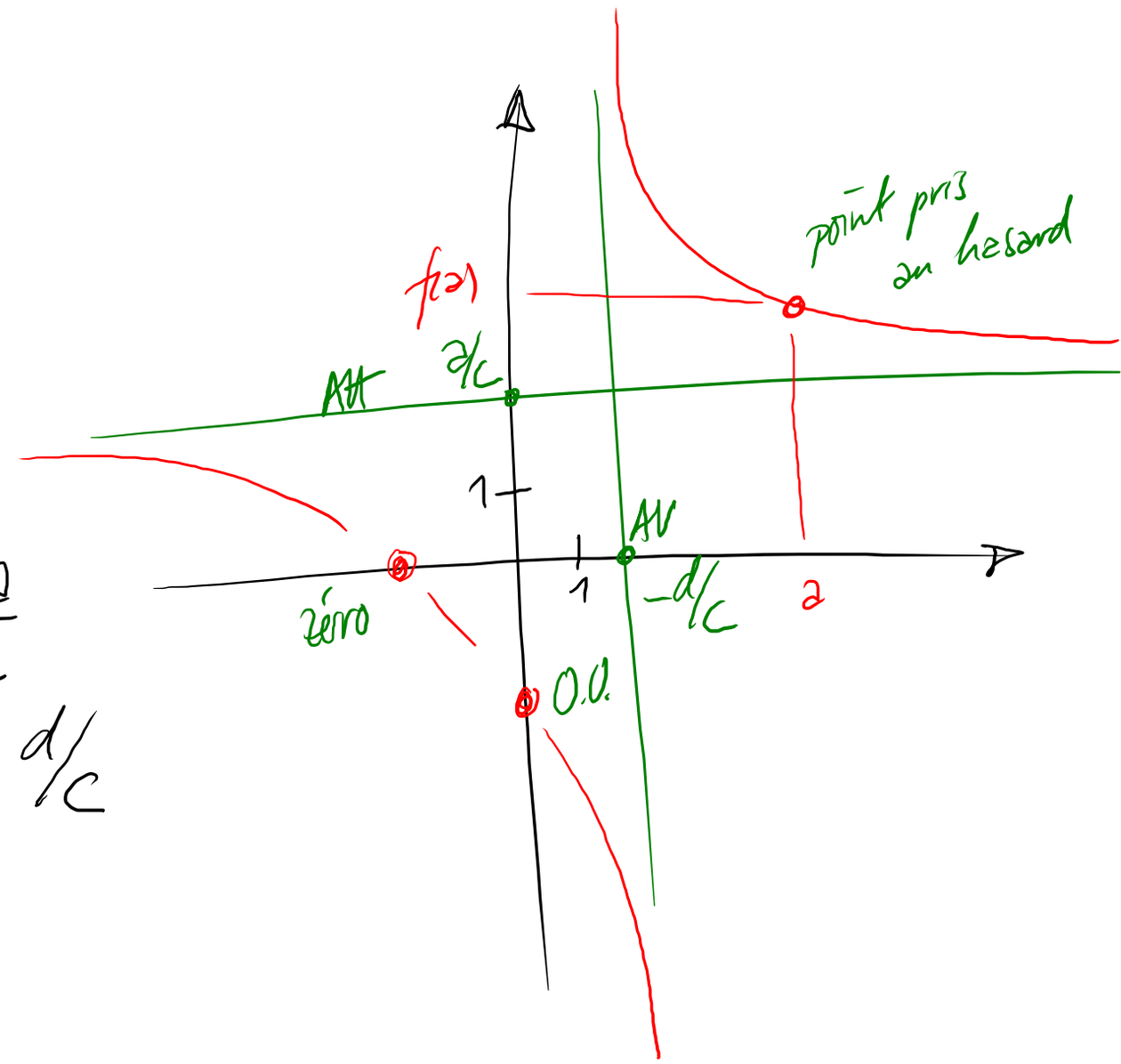
$c \neq 0$

① $D_f$

② Zeros / Signe / O.O. $f(0)$

③ Asymptotes
- A.H. $y = \frac{a}{c}$
- A.V. $x = -d/c$

④ Graphe

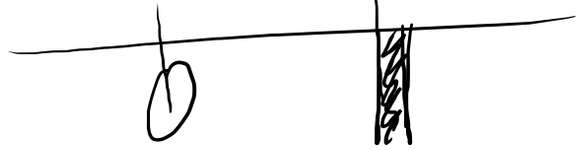


$\sqrt{x^2-1}$

Signe de $x^2-1$

$$f(x) = \frac{3x+2}{2x-3}$$

zéro : $-0,6$ ; à exclure : $1,5$



$$\frac{3x+2}{2x-3} = 0 \Rightarrow 3x+2=0 \Rightarrow x = -0,6$$

$$\frac{A}{B} = 0 \qquad A = 0$$
$$B \neq 0$$

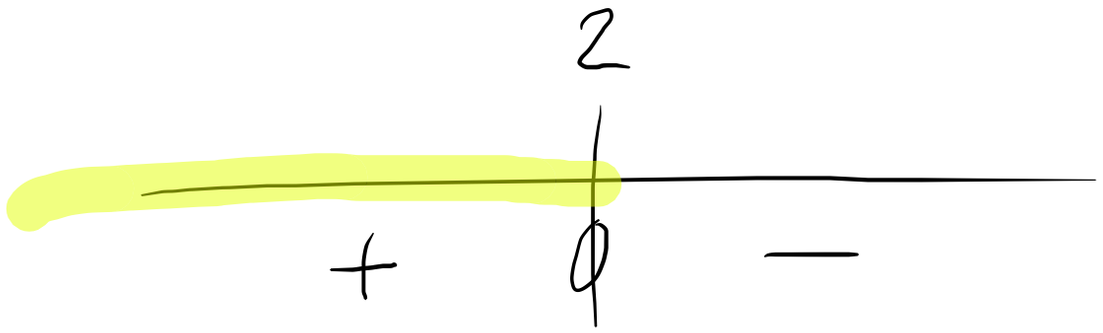
$$2x-3 = 0 \;/\; 2x = 3 \;/\; x = \frac{3}{2} = 1,5$$

$$\Rightarrow D_f = \mathbb{R} \setminus \{1,5\} = \mathbb{R}^* \setminus \{1,5\}$$

~~Soustraction~~

Toutes les valeurs réelles sont utilisables SAUF 1,5

$f(x) = 2 - x$




$f(x) = 0 \iff x = 2$

$\sqrt{f(x)} = \sqrt{2-x}$ existe si $x \leq 2$

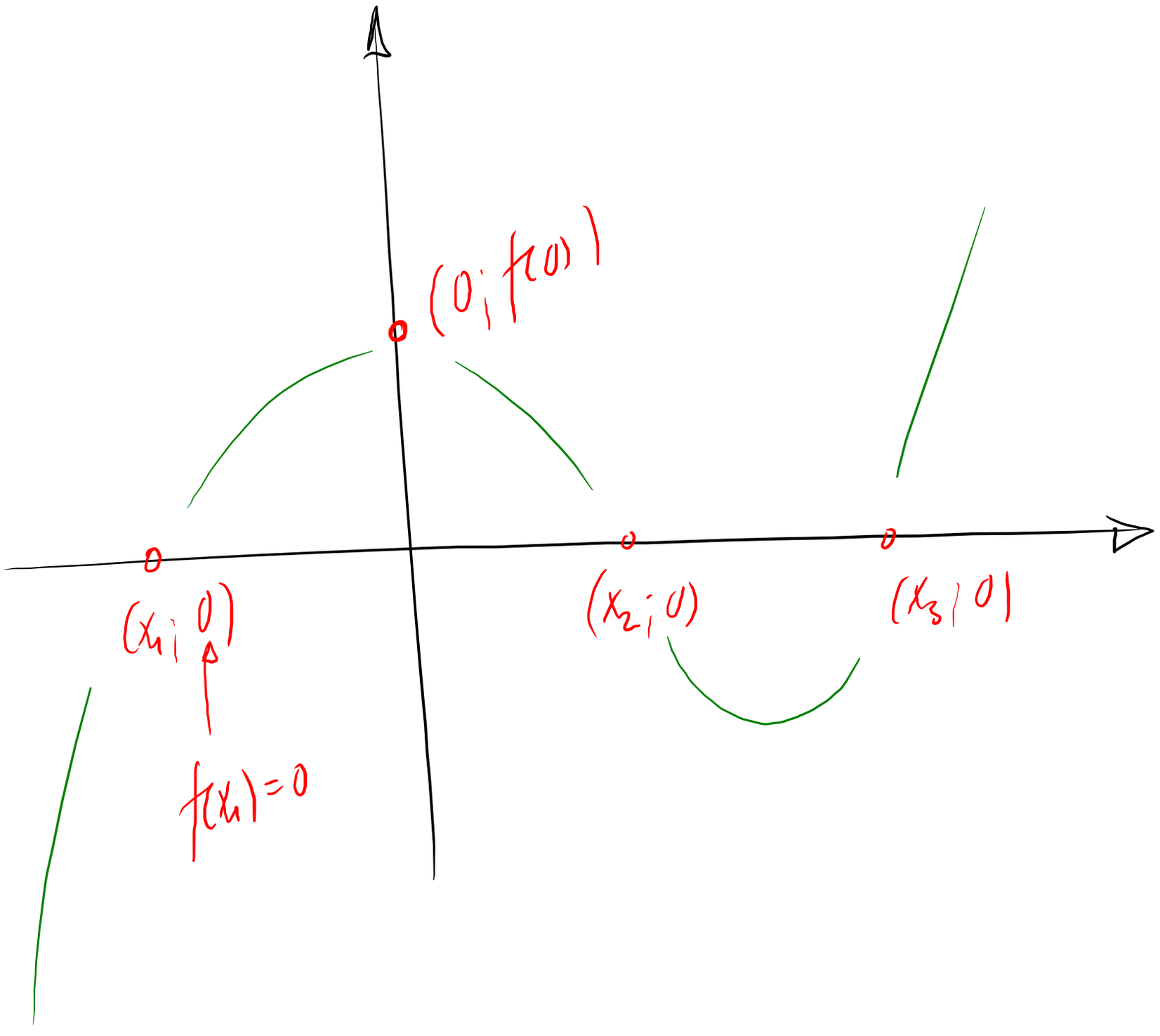
$\mathcal{D}_{\sqrt{2-x}} = ]-\infty ; 2]$

$$f(x) = ax^2 + bx + c$$

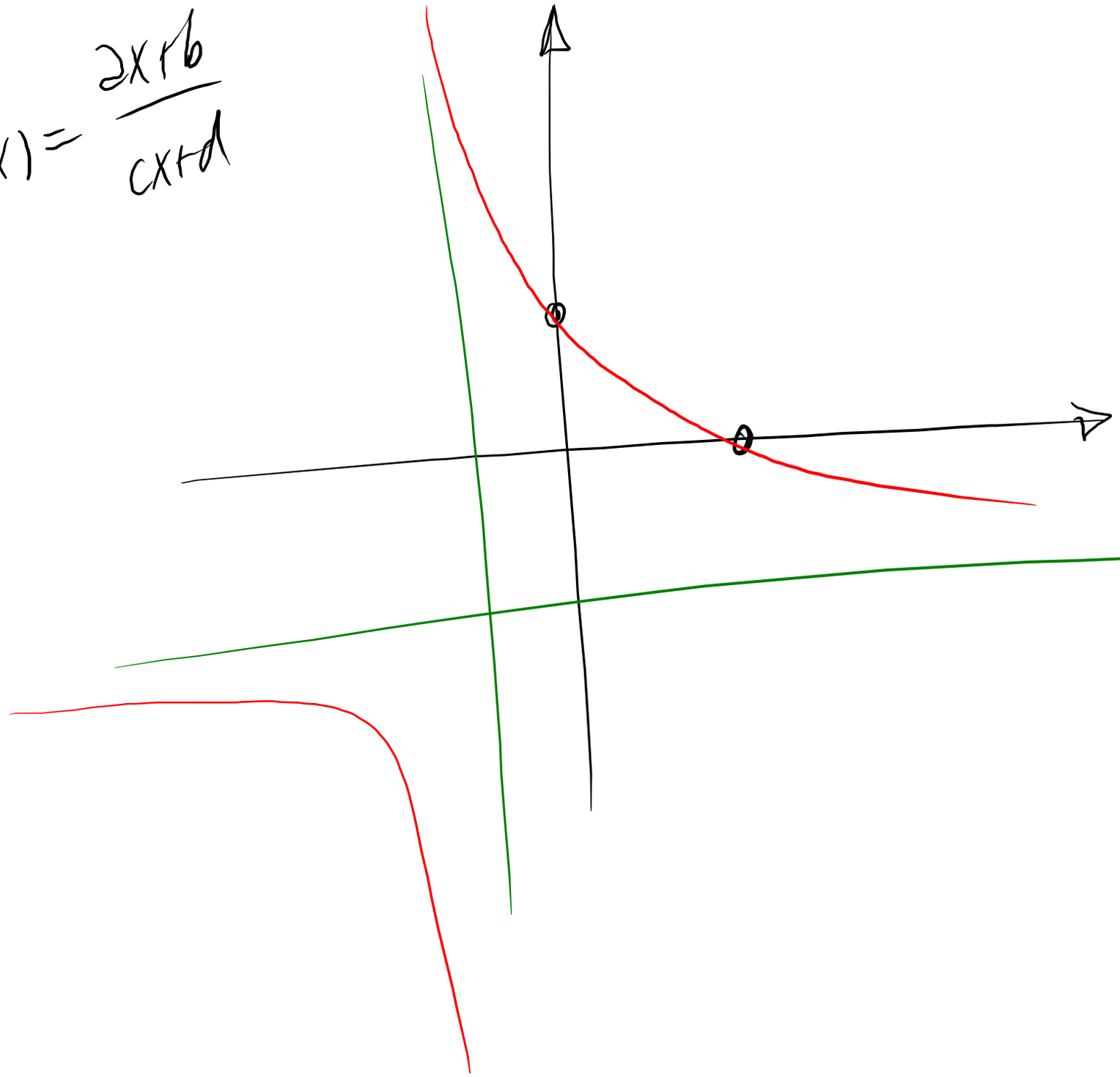
$$-\frac{b}{2a} = 2$$

$$f(2) = 5 \Rightarrow a(2)^2 + b \cdot 2 + c = 5$$

$$f(4) = -1 \Rightarrow a(4)^2 + b \cdot 4 + c = -1$$


(0; f(0))
(x₁; 0)
f(x₁) = 0
(x₂; 0)
(x₃; 0)

$$f(x)=\frac{ax+b}{cx+d}$$



$f(x)=0$

$$\frac{ax+b}{cx+d}=0 \qquad \frac{0}{?}$$

$cx+d \neq 0$

$ax+b=0$

$x=-b/a$