$f : D \longrightarrow E$

$x \longmapsto f(x)$

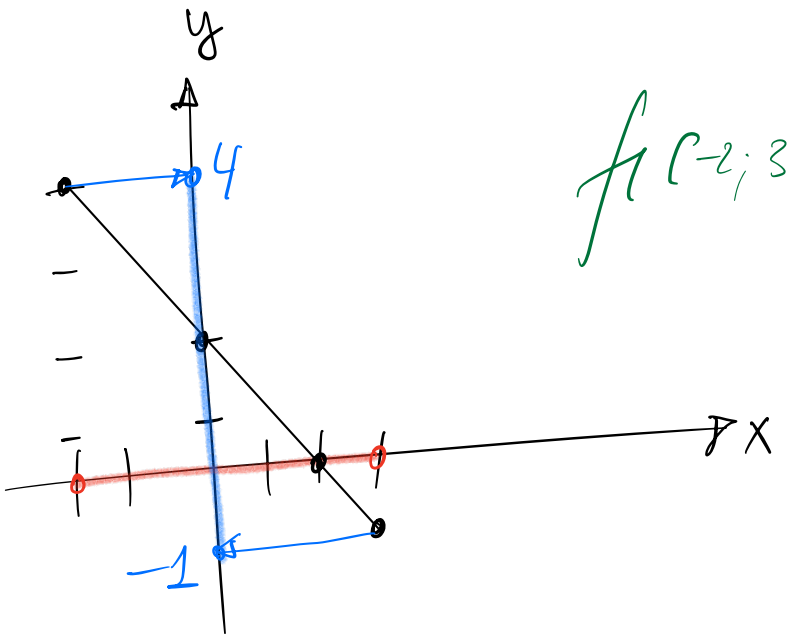
image de x par f

Fonction

$f(D)$ est l'image de la fonction

Exemple : $f : [-2;3] \longrightarrow \mathbb{R}$

$x \longmapsto 2-x$

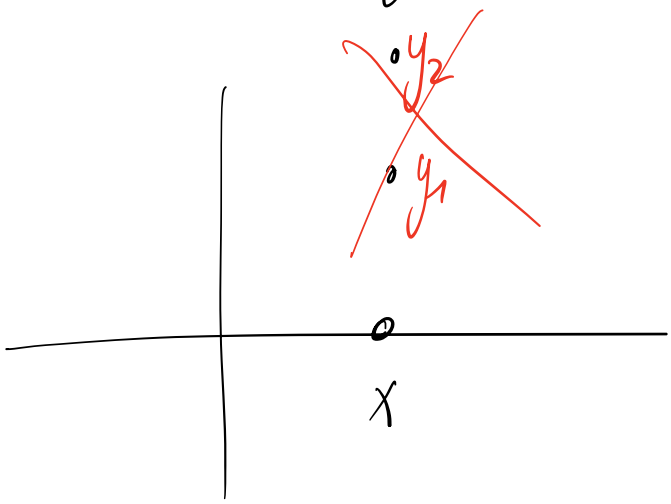


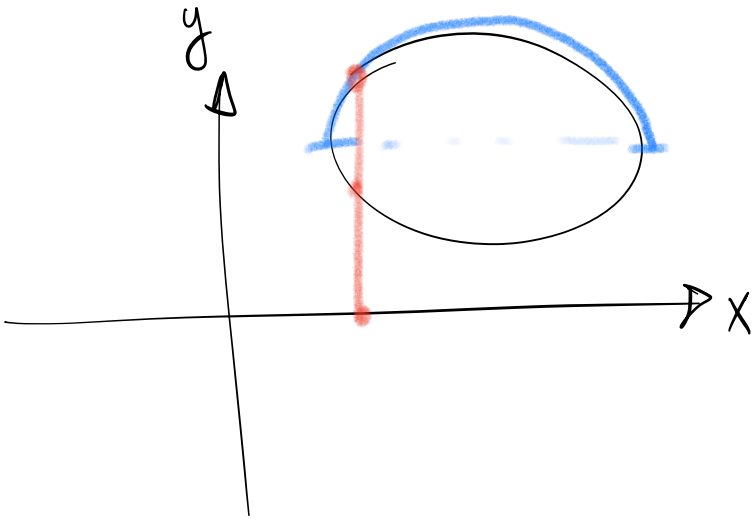
$f([-2;3]) = [-1;4]$

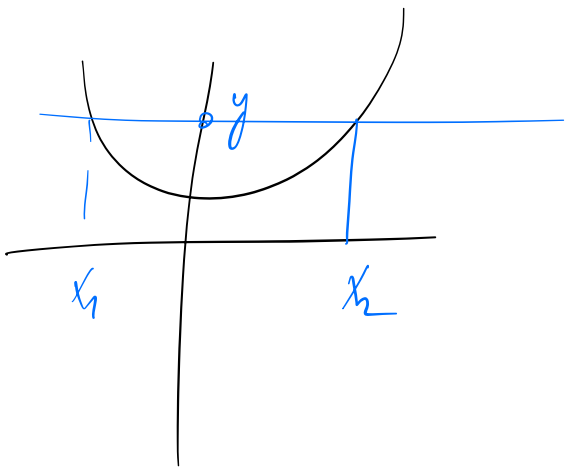
Def: $f : D \to E$ est une fonction

si $\forall x \in D \ \exists$ <u>un seul</u> $y \in E$

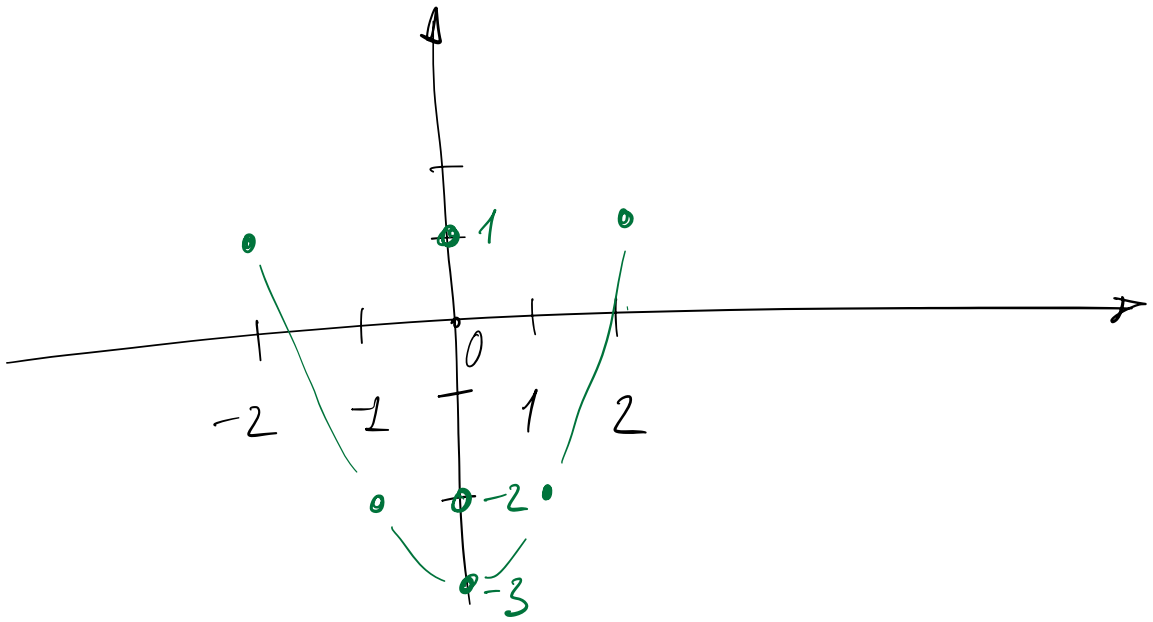
tq. $f(x) = y$







$f(x) = x^2 - 3$ $\quad x \in \{-2; -1; 0; 1; 2\}$



$f(-2) = (-2)^2 - 3 = 4 - 3 = 1$ $\quad f(0) = -3$

$f(1) = 1^2 - 3 = 1 - 3 = -2$

$f(-1) = (-1)^2 - 3 = -2$

$f : \mathbb{N}^* \longrightarrow \mathbb{N}$

$x \longmapsto 3x - 2$

$\mathbb{N}^* = \{1, 2, 3, \dots\}$

$\mathbb{N} = \{0, 1, 2, 3, \dots\}$

x	
1	1
2	4
3	7

$\downarrow +3$

$f(x) \in \mathbb{N} \quad \forall x \geq 1$

$\mathbb{N}^* = \mathbb{N} - \{0\}$

$\mathbb{N} = \{0; 1; 2; 3; \dots\}$

$\mathbb{Z} = \{0; \pm 1; \pm 2; \pm 3; \dots\}$

$\mathbb{Q}$ fractions

$\mathbb{R}$ reels

$\mathbb{C}$ complexes

$\mathbb{N}^* = \mathbb{N} \setminus \{0\}$

$\mathbb{Z}^* = \mathbb{Z} \setminus \{0\}$

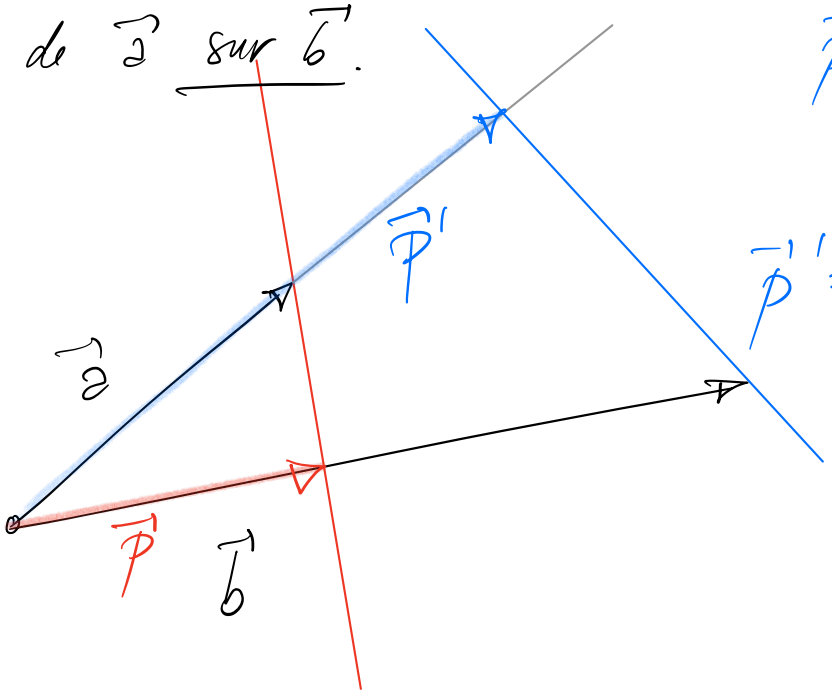
$\mathbb{Z}_+ = \mathbb{N}$

$\mathbb{R}_+ = [0; +\infty[$

$\mathbb{Q}^* = \mathbb{Q} - \{0\}$

etc.

$\vec{p}$ est la proj. de $\vec{a}$ sur $\vec{b}$.



$\vec{p}'$: $\vec{b}$ sur $\vec{a}$

$$\vec{p}' = \frac{\vec{b} \cdot \vec{a}}{\|\vec{a}\|^2} \cdot \vec{a}$$

$$\vec{p} = k \cdot \vec{b}$$

$$\vec{p}' = \frac{\vec{a} \cdot \vec{b}}{\|\vec{b}\|^2} \cdot \vec{b}$$