$$3x - 2y = 8$$
$$x + y = -1$$

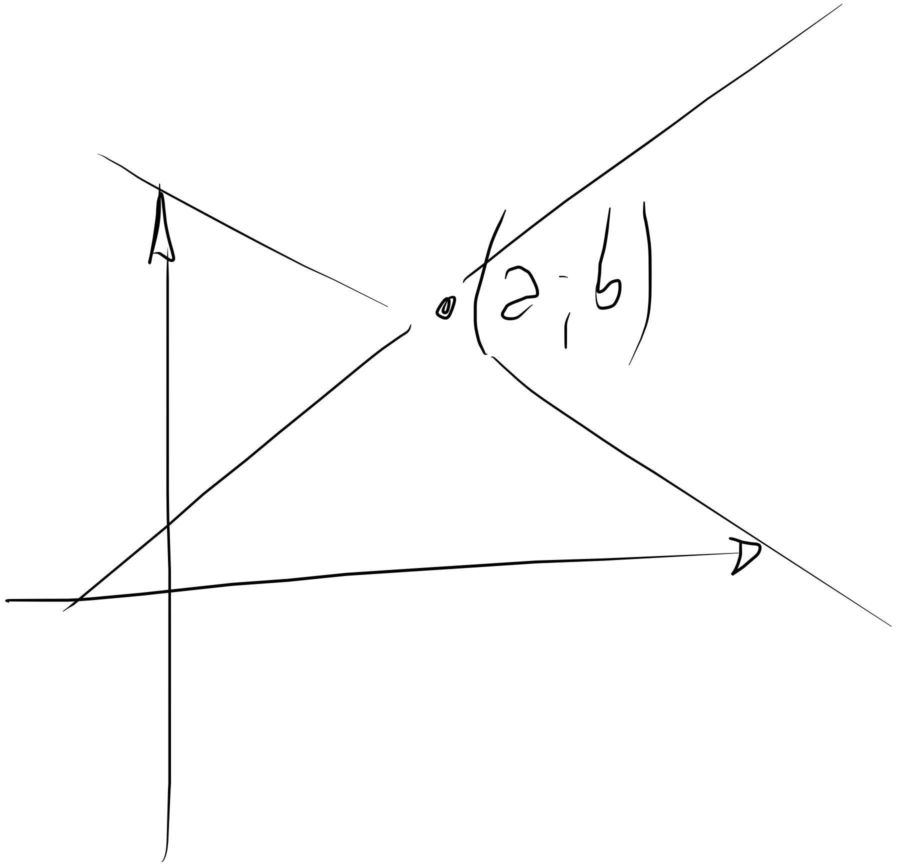
$$\rightsquigarrow$$

$$x = 2$$
$$y = 6$$

$$S = \{(2, 6)\}$$

$$S' = \{ \emptyset \}$$

$$\boxed{\begin{array}{c} S' = \{ \} = \emptyset \\ \iff S' \text{ est vide} \end{array}}$$



$$\begin{cases} x+y=2 \\ x-y=1 \end{cases}$$

$x = 1{,}5$ et $y = 0{,}5$

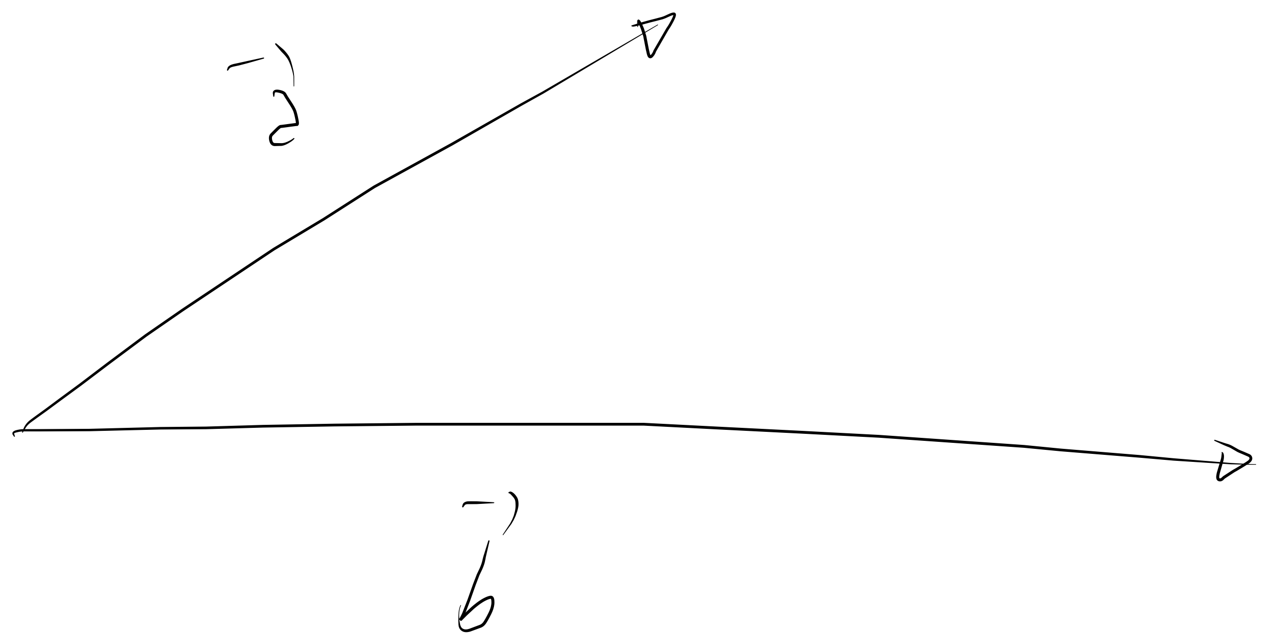
$$\boxed{S = \{(1{,}5\,;\,0{,}5)\}}$$

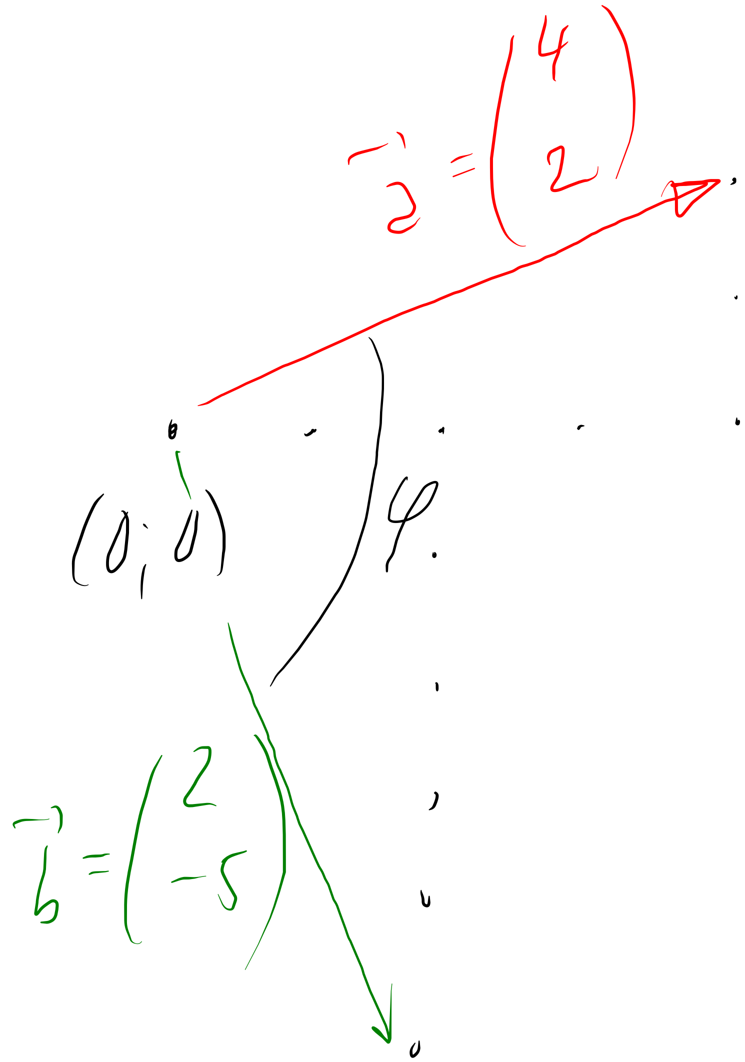
$$x^2 - 4x + 3 = 0$$

$$(x-1)(x-3) = 0$$

$$\boxed{x = 1 \text{ ou } x = 3}$$

$$\boxed{S = \{1\,;\,3\}}$$


a
b



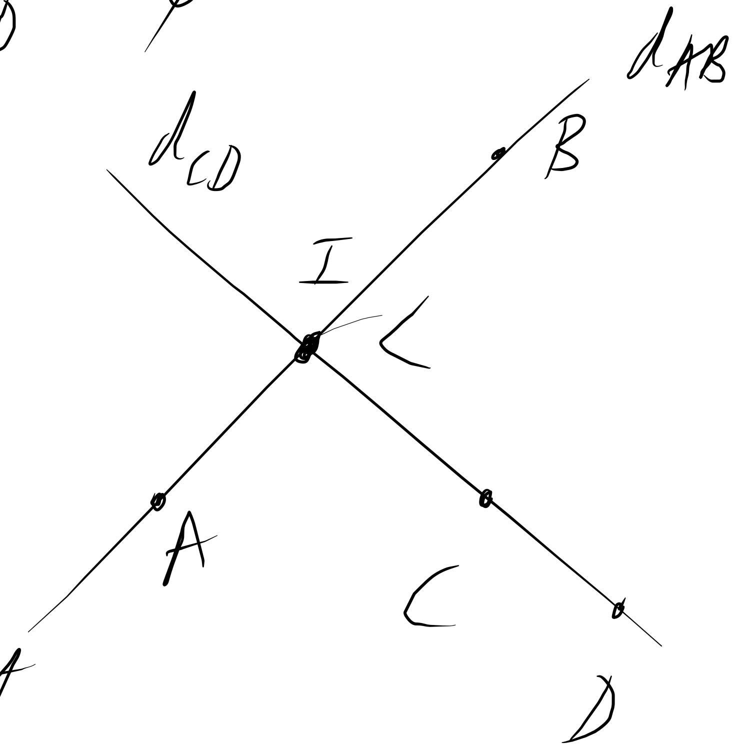
$$\boxed{\cos\varphi = \frac{\vec{a}\cdot\vec{b}}{\|\vec{a}\|\cdot\|\vec{b}\|}}$$

$$|x| = \begin{cases} x & \text{si } x \geq 0 \\ -x & \text{sinon} \end{cases}$$

Orthogonal $\vec{AB} \cdot \vec{CD} = 0$

mais $d_{AB} \cap d_{CD} = \emptyset \iff d_{AB}, d_{CD}$ gauches

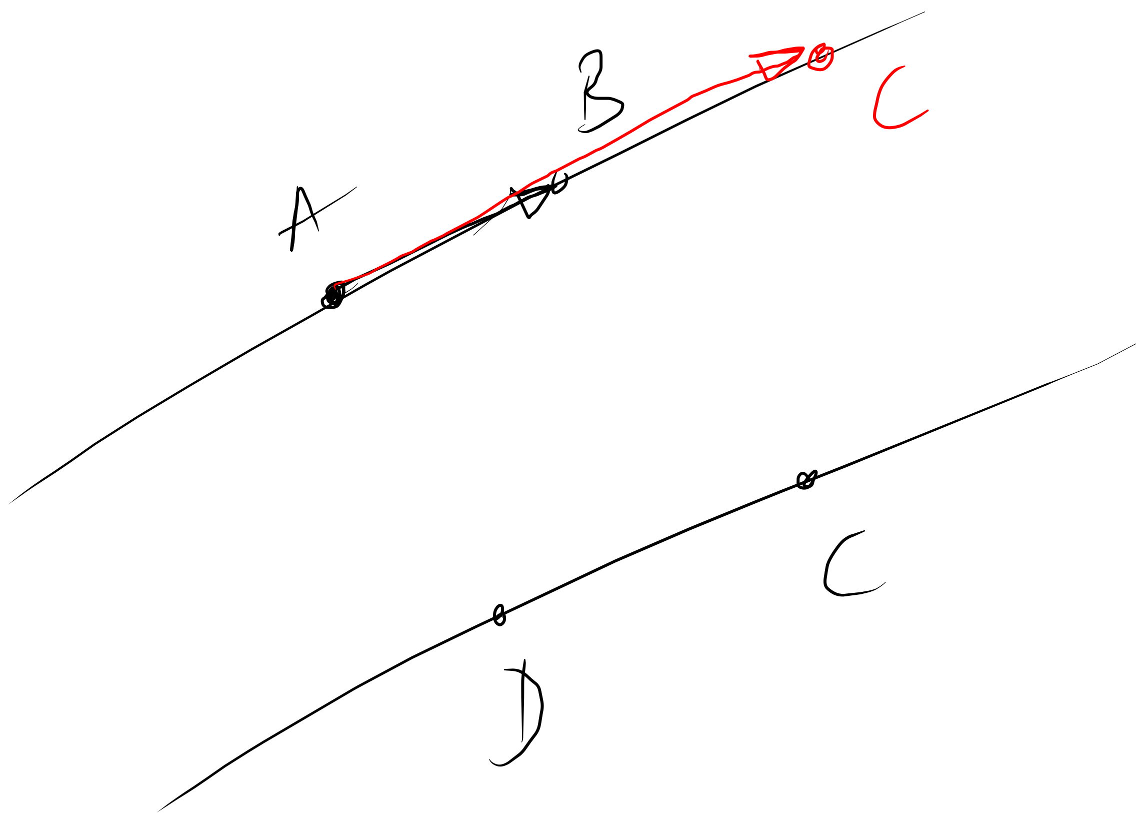
Perpendiculaire



$\vec{AB} \cdot \vec{CD} = 0$ et d_{AB}, d_{CD} se coupent

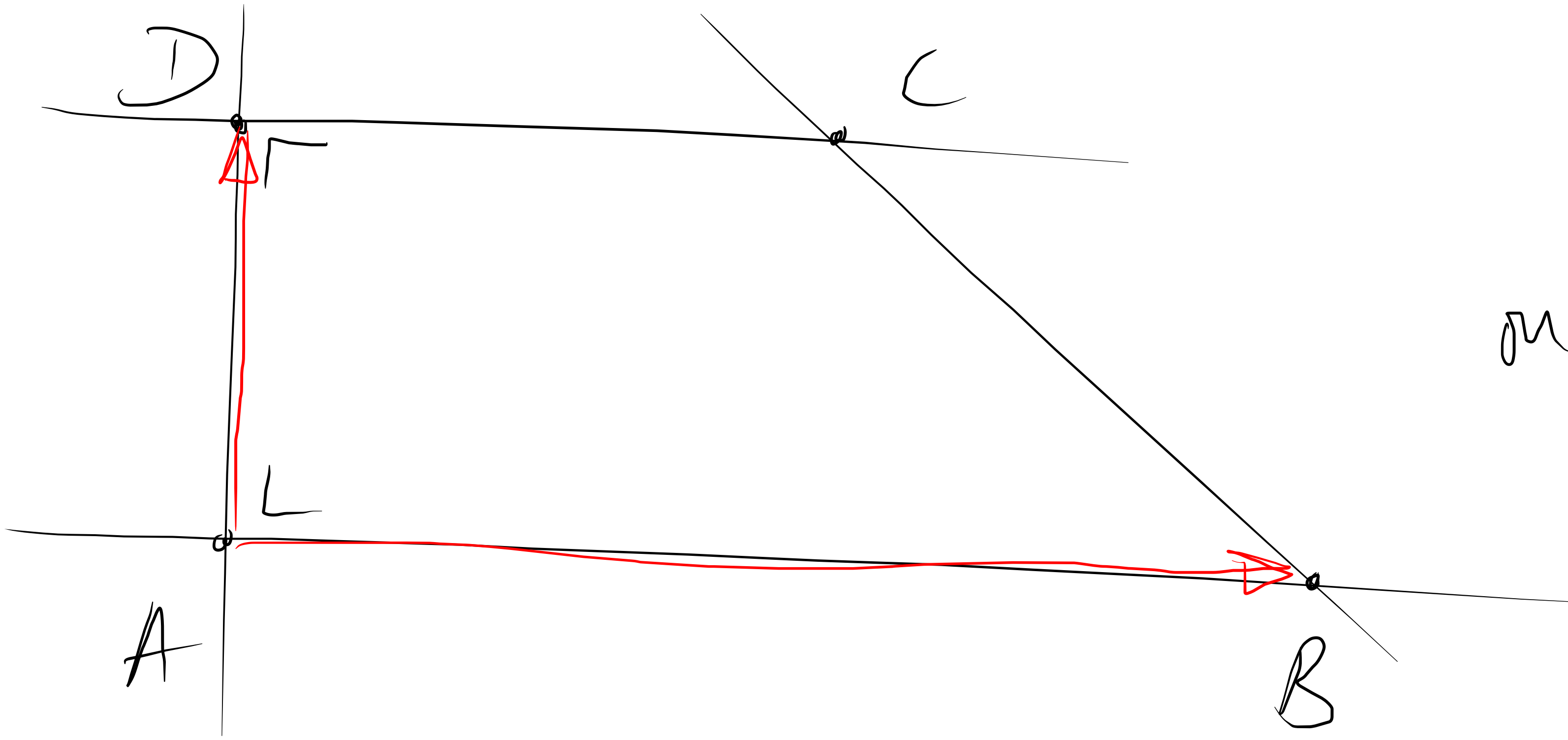
$$\vec{a} \cdot \vec{b} = 0 \iff \vec{a} \perp \vec{b}$$

- $\vec{AB} \cdot \vec{CD} = 0$
  - $\vec{OA} + k\vec{AB} = \vec{OC} + k\vec{CD}$ admet une seule solution PERP
    $\Rightarrow$ d_{AB} et d_{CD} se coupent
  - sinon
    d_{AB}, d_{CD} sont gauches
    ORTH.
- $\vec{AB} \cdot \vec{CD} \neq 0$
  - Ni ortho.
    ni perp.

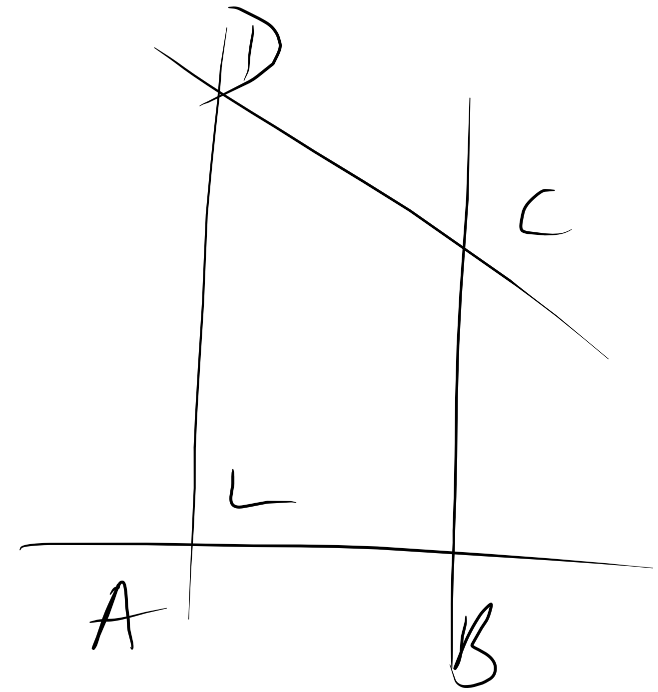


$d_{AB} \parallel d_{CD}$

$\Leftrightarrow \overrightarrow{AB} = k\,\overrightarrow{CD}$



ou



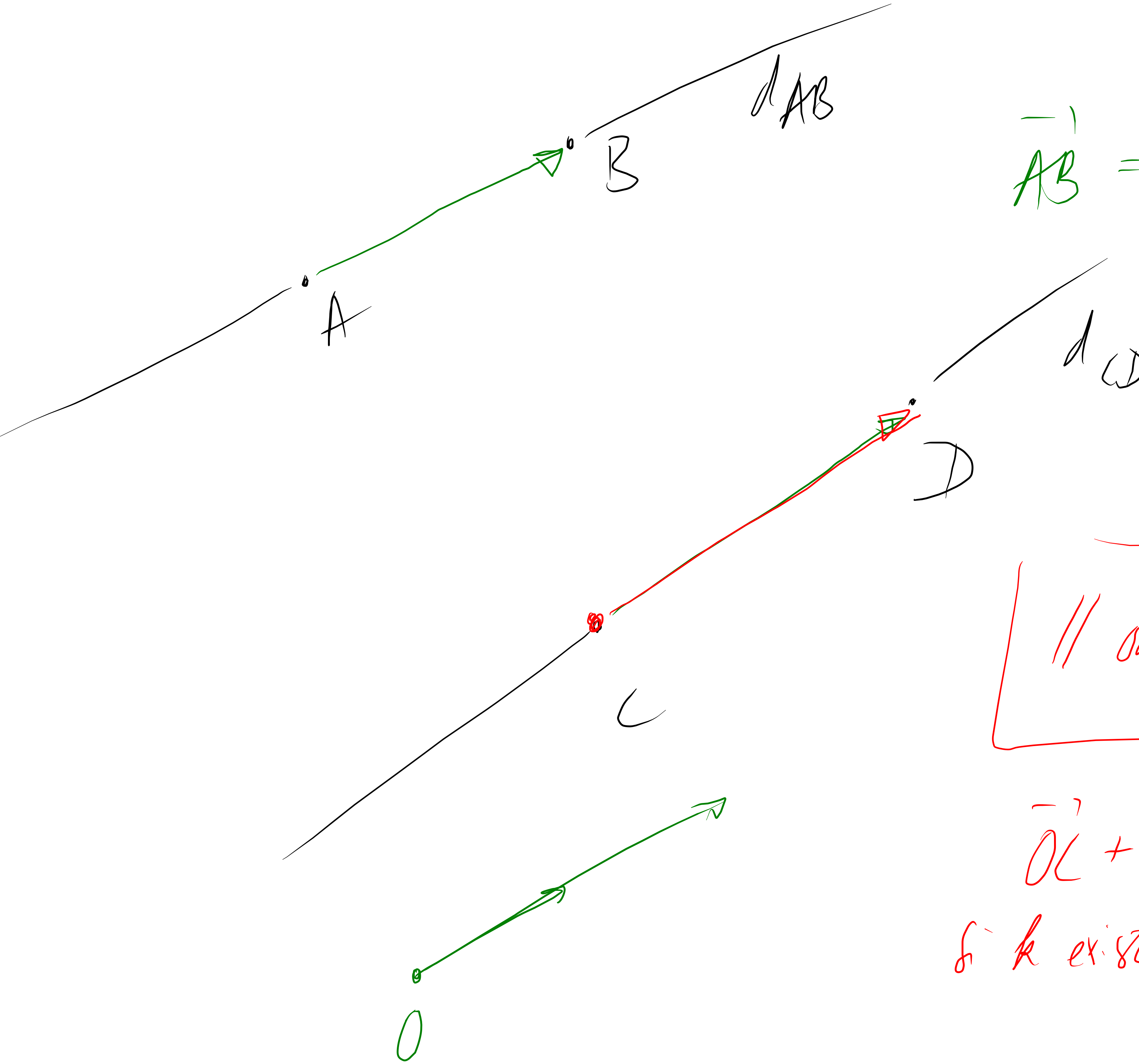
$\vec{AB} = k\,\vec{DC}$ et $\vec{AB} \cdot \vec{AD} = 0$

ou $\vec{AD} = k \cdot \vec{BC}$

et

$\vec{AB} \cdot \vec{AD} = 0$

$\vec{AB} = k \cdot \vec{CD}$

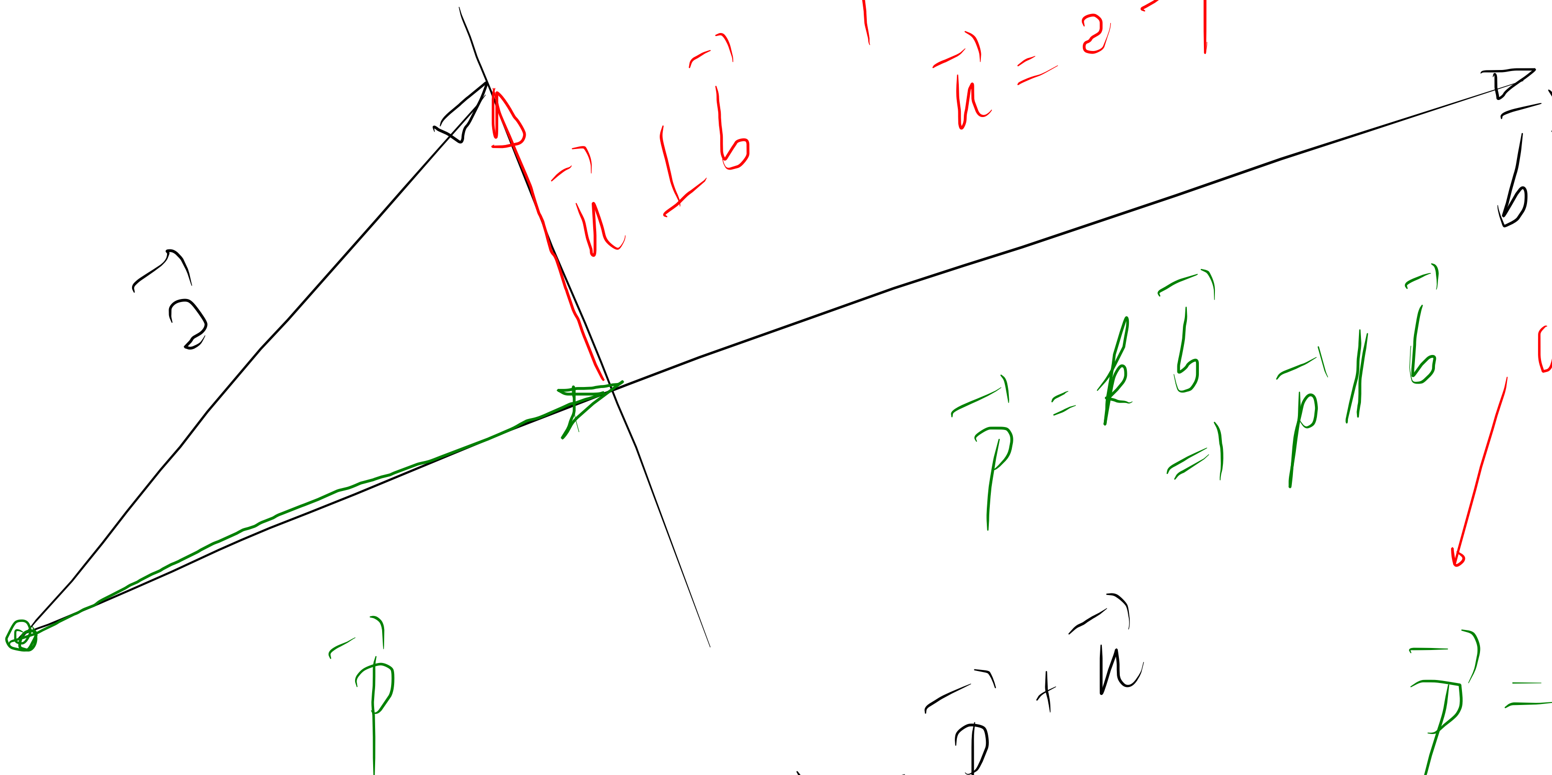


// ou confondu ?

$\vec{OC} + k\,\vec{CD} = \vec{OA}$

si k existe, d_{AB} et d_{CD} sont confondues

sinon d_{AB} et d_{CD} sont strict //



$\vec{n} \perp \vec{b}$

$\vec{p} + \vec{n} = \vec{a}$

$\vec{n} = \vec{a} - \vec{p}$

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

$\vec{p} = k\vec{b} \Rightarrow \vec{p} \parallel \vec{b}$

vecteur

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

$\in \mathbb{R}$

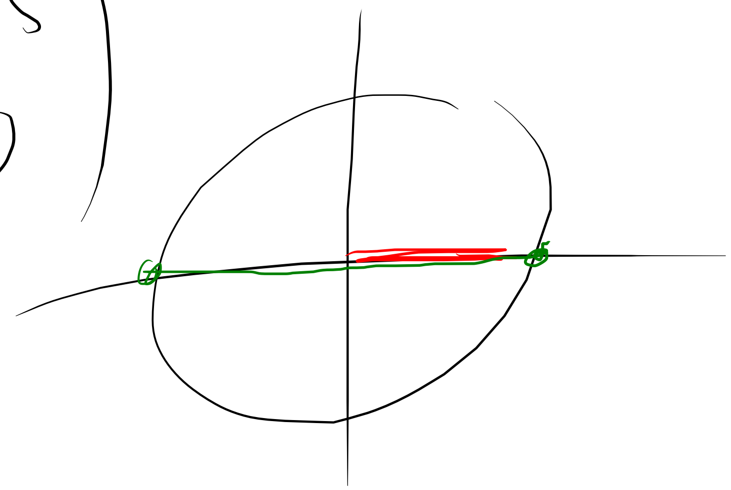
$$\vec{a} = \vec{p} + (\vec{a} - \vec{p}) = \vec{p} + \vec{n}$$

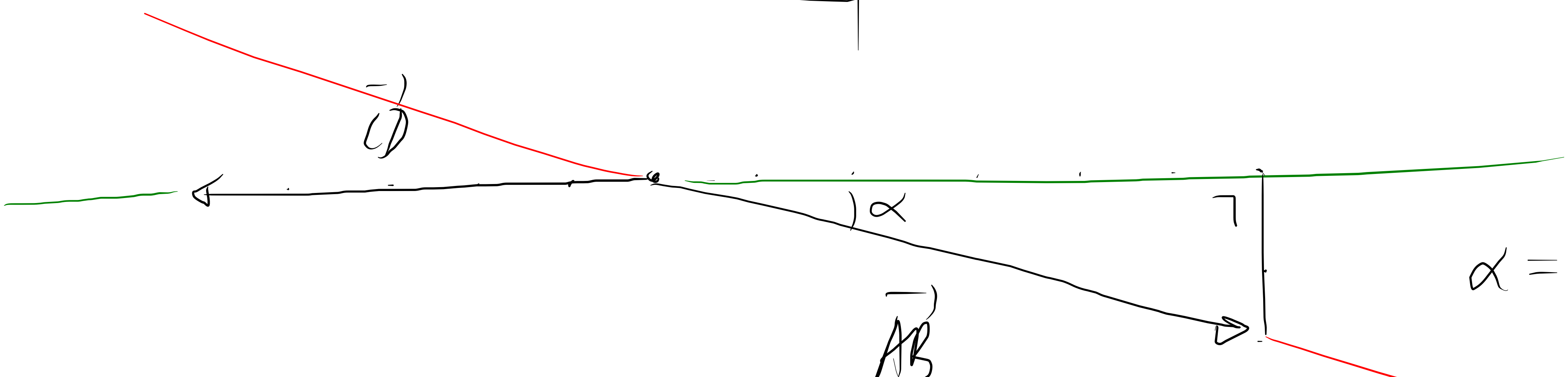
$$\vec{AB} = \begin{pmatrix} 6 \\ -2 \end{pmatrix}$$

$$\vec{CD} = \begin{pmatrix} -5 \\ 0 \end{pmatrix}$$

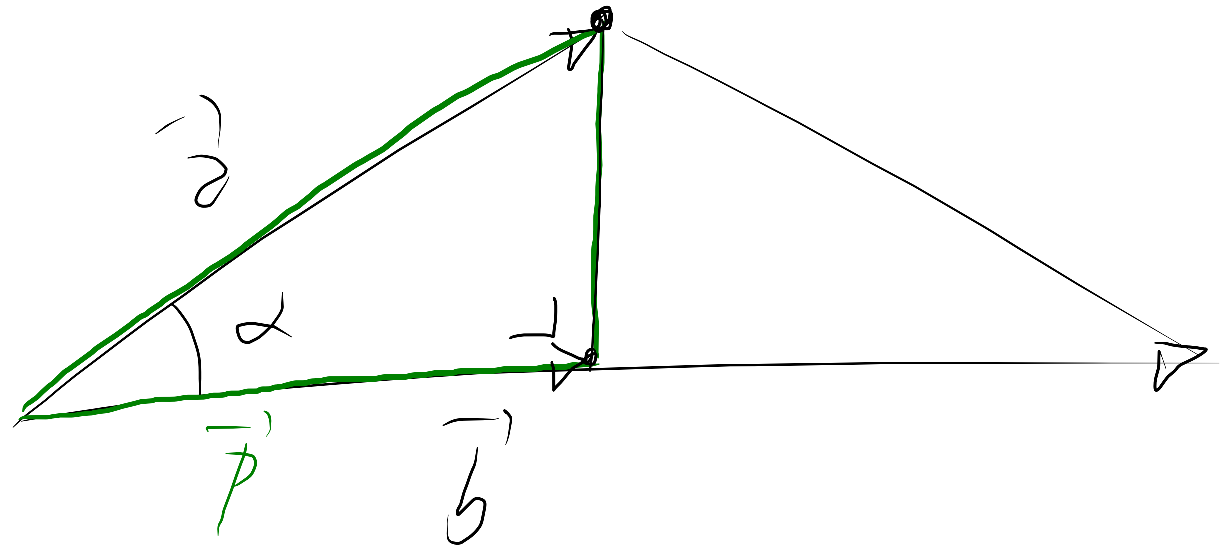
$$\cos\alpha = \frac{|\vec{AB} \cdot \vec{CD}|}{\|\vec{AB}\| \cdot \|\vec{CD}\|}$$

$$= \frac{|-30|}{\sqrt{40} \cdot 5} = \frac{6}{\sqrt{40}}$$





$$\alpha = \arctan\left(\frac{1}{3}\right)$$



$$\cos\alpha = \frac{\|\vec{p}\|}{\|\vec{a}\|}$$