$$\vec{a} = \begin{pmatrix} a_1 \\ a_2 \end{pmatrix} \qquad \vec{b} = \begin{pmatrix} b_1 \\ b_2 \end{pmatrix} \qquad \vec{u} = \begin{pmatrix} u_1 \\ u_2 \\ u_3 \end{pmatrix} \qquad \vec{w} = \begin{pmatrix} w_1 \\ w_2 \\ w_3 \end{pmatrix}$$

produit scalaire

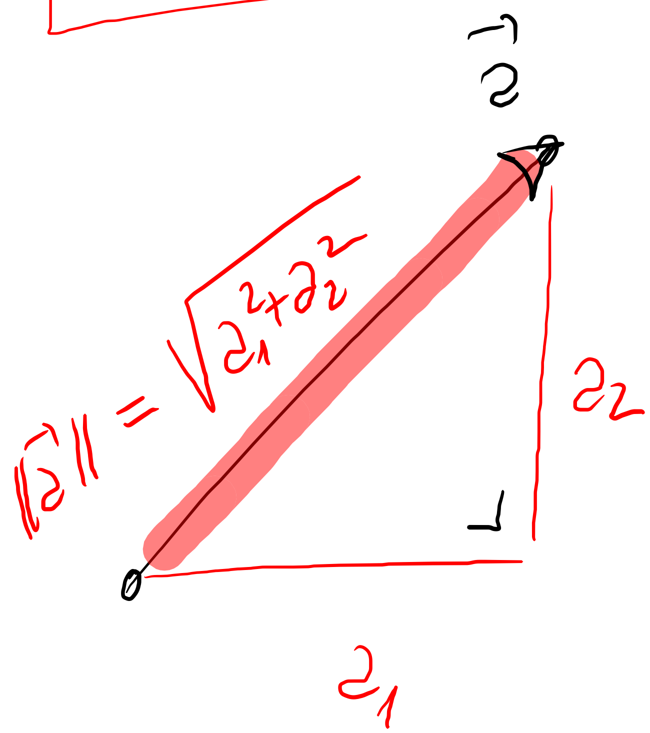
$$\underset{\text{vecteur}}{\vec{a}} \bullet \underset{\text{vecteur}}{\vec{b}} = \underbrace{a_1 b_1 + a_2 b_2}_{\text{nombre}}$$

$$\vec{u} \bullet \vec{w} = u_1 w_1 + u_2 w_2 + u_3 w_3$$

$$\boxed{\vec{a} \perp \vec{b} \Leftrightarrow \vec{a} \cdot \vec{b} = 0}$$

$$\begin{pmatrix} 1 \\ 2 \end{pmatrix} \bullet \begin{pmatrix} 3 \\ 4 \end{pmatrix} = 1 \cdot 3 + 2 \cdot 4 = 3 + 8 = 11 \in \mathbb{R}$$

$$\boxed{\|\vec{a}\| = \sqrt{a_1^2 + a_2^2} \quad \text{si} \quad \vec{a} = \begin{pmatrix} a_1 \\ a_2 \end{pmatrix}}$$ plan

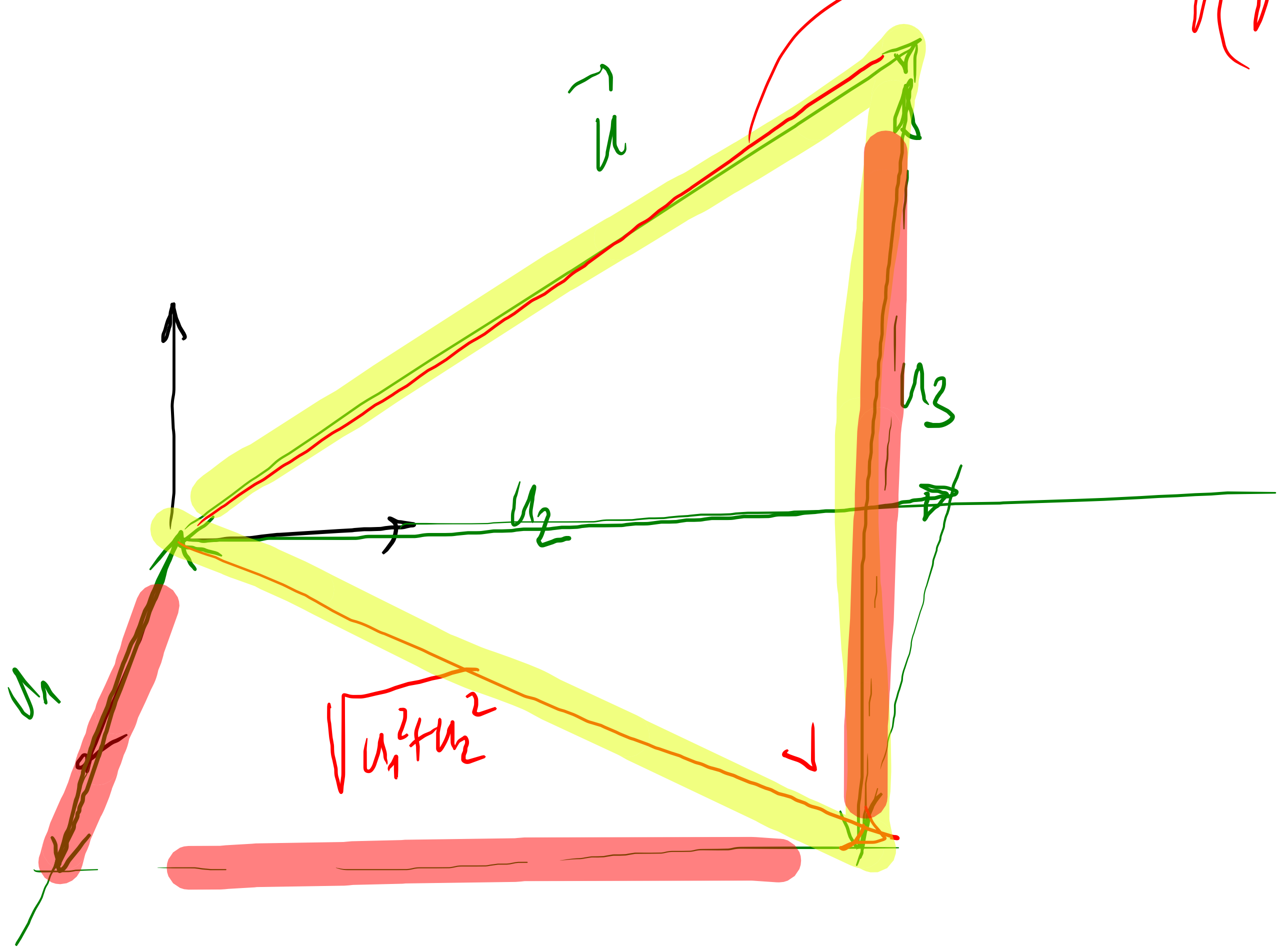



La norme de $\vec{a}$ se note

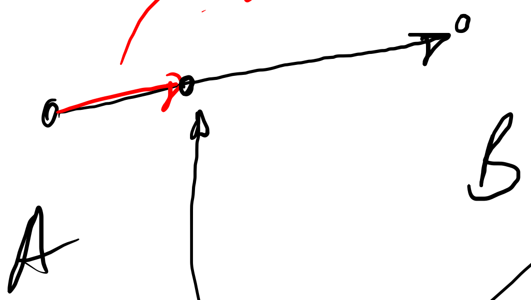
$\|\vec{a}\|$

$$\boxed{\vec{u} = \begin{pmatrix} u_1 \\ u_2 \\ u_3 \end{pmatrix} \qquad \|\vec{u}\| = \sqrt{u_1^2 + u_2^2 + u_3^2}}$$ espace

$$\sqrt{\left(\sqrt{u_1^2+u_2^2}\right)^2+u_3^2} = \sqrt{u_1^2+u_2^2+u_3^2}$$



$$\frac{1}{5}\vec{AB} = 0{,}2 \cdot \vec{AB}$$




$$A + \frac{1}{5}\vec{AB}$$

$$A + \frac{2}{5}\vec{AB}$$

$$A + \frac{3}{5}\vec{AB}$$

$$A + \frac{4}{5}\vec{AB}$$

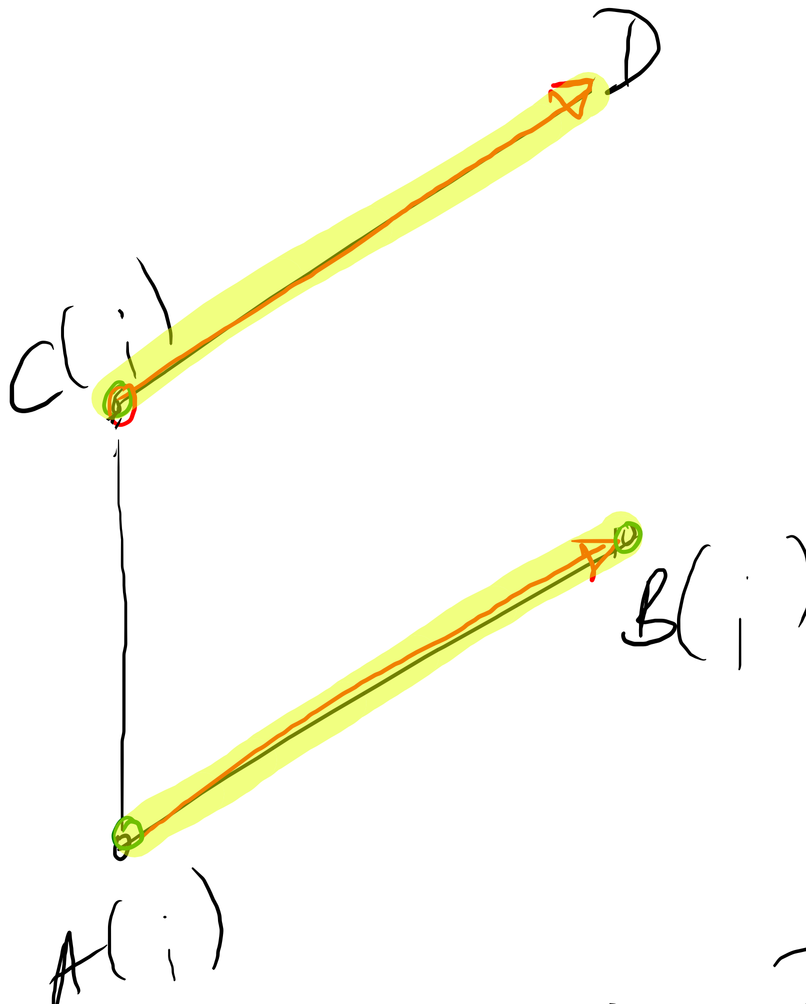
$$7k - 3 \cdot \left(\frac{35}{29}\right) = 0$$

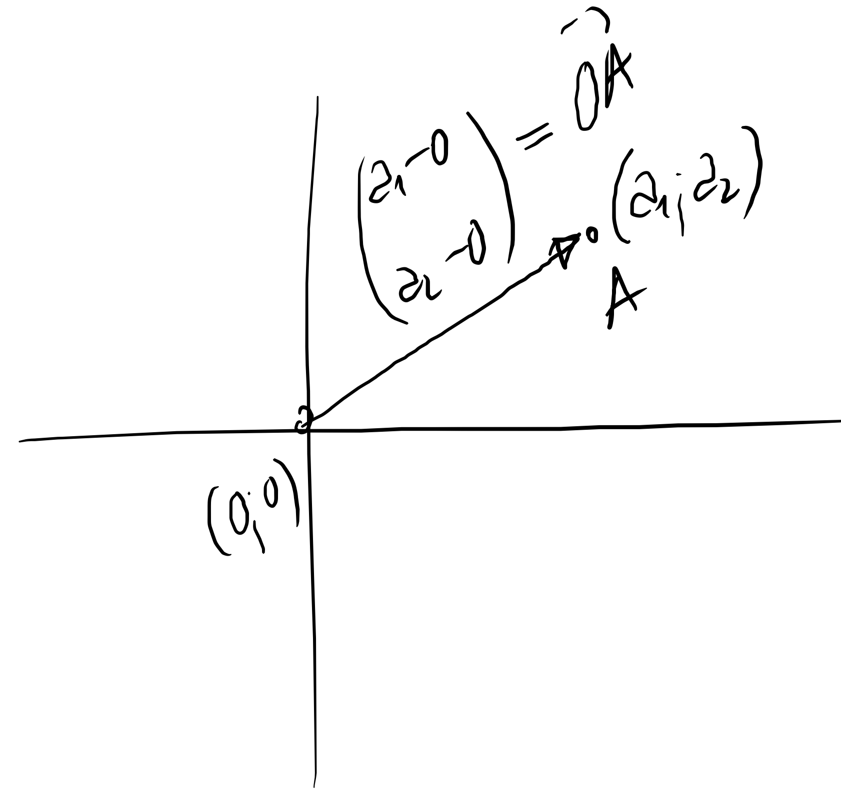
$$\frac{7k}{1} \cdot 29 - 3 \cdot \frac{35}{\cancel{29}} \cdot \cancel{29} = 0$$

$$203k - 3 \cdot 35 = 0$$

$$203k - 105 = 0$$

$$k = \frac{105}{203}$$




$$\vec{OC} + \vec{AB} = \vec{OD}$$

$$«C + \vec{AB}»$$

$$\boxed{x^3 + 2x^2 - 5x - 6}$$

$$x\left(x^3+2x^2-5x-6\right) =$$

$$x(x+1)(x^2+x-6) = \ldots$$

$D_{-6}: \pm 1; \pm 2; \pm 3; \pm 6$

| | | | | |
|---|---|---|---|---|
| | 1 | 2 | -5 | -6 |
| 1 | | 1 | 3 | -2 |
| | 1 | 3 | -2 | -8 |

$(x-1)$ ?

$$(x+1)(x^2+x-6)$$

| | | | | |
|---|---|---|---|---|
| | 1 | 2 | -5 | -6 |
| -1 | | -1 | -1 | 6 |
| | 1 | 1 | -6 | 0 |

$(x+1)$ ✓

$\vec{a} = \begin{pmatrix} \\ \\ \end{pmatrix}$ $\vec{b} = \begin{pmatrix} \\ \\ \end{pmatrix}$ $\vec{c} = \begin{pmatrix} \\ \\ \end{pmatrix}$

$\vec{x}$ vecteur $\vec{x} = k \cdot \vec{a}$ $k \in \mathbb{R}$

$\lambda$ un nombre

$$\vec{x} + \lambda \cdot \vec{b} = \vec{c}$$