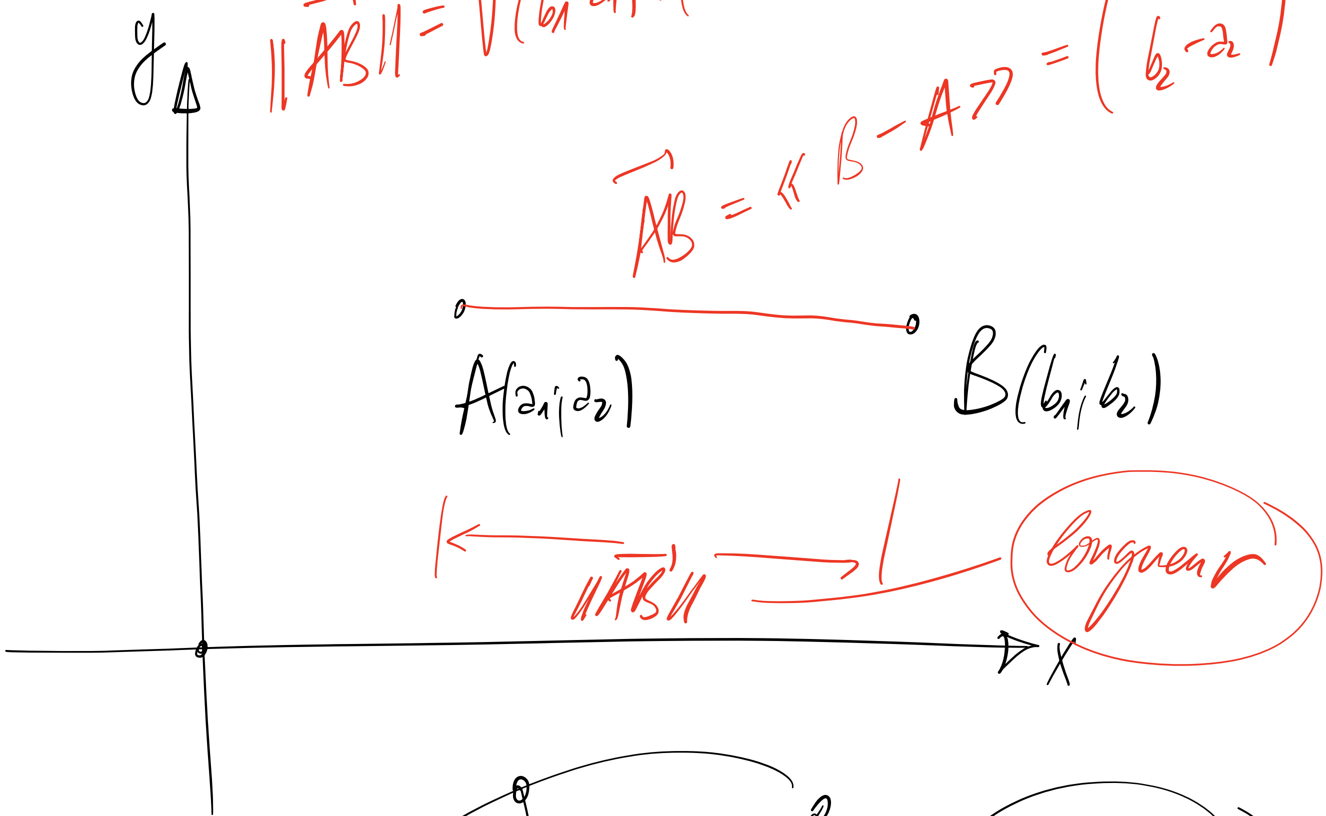
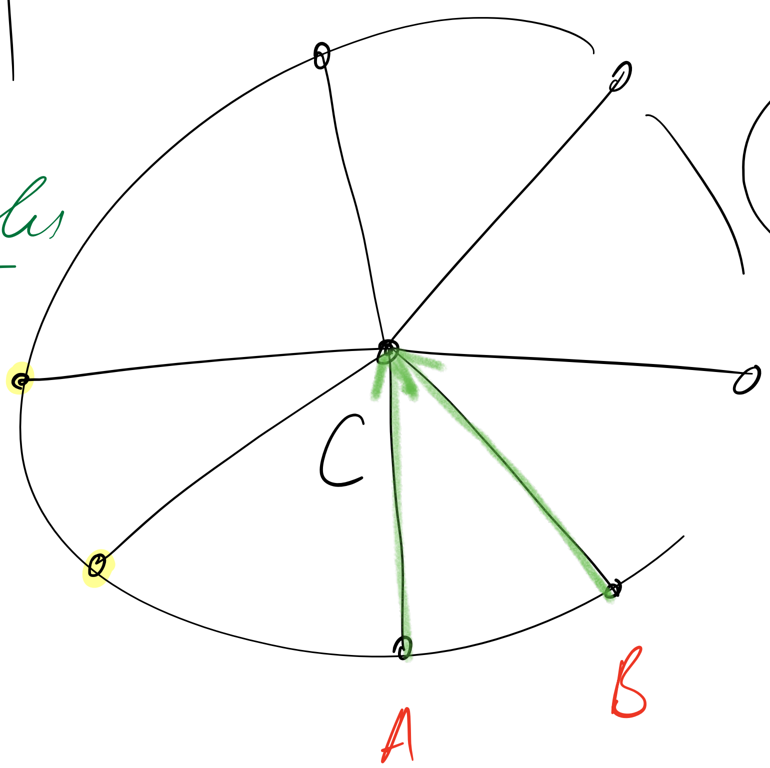
$$\|\vec{AB}\| = \sqrt{(b_1-a_1)^2+(b_2-a_2)^2}$$

$$\vec{AB} = \langle\langle B - A \rangle\rangle = \begin{pmatrix} b_1-a_1 \\ b_2-a_2 \end{pmatrix}$$



Exemples



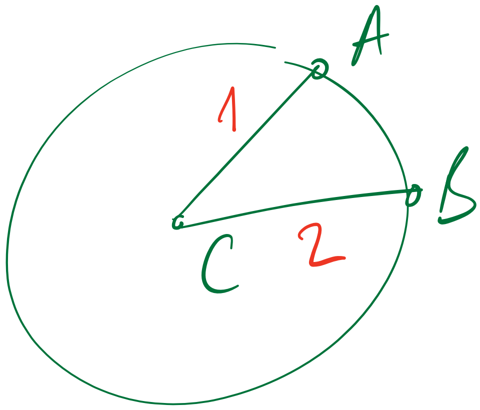
Cercle

Lieu des pts équidistants de C.

A et B sont équidistants de C

$\Leftrightarrow \|\vec{AC}\| = \|\vec{BC}\|$

$A(1;1)$ $B(1;0)$ $C(1;2)$



A, B sur un cercle de centre C ? Ben non.

$\vec{AC} = \begin{pmatrix}0\\1\end{pmatrix}$ $\|\vec{AC}\| = \sqrt{0^2+1^2} = 1$

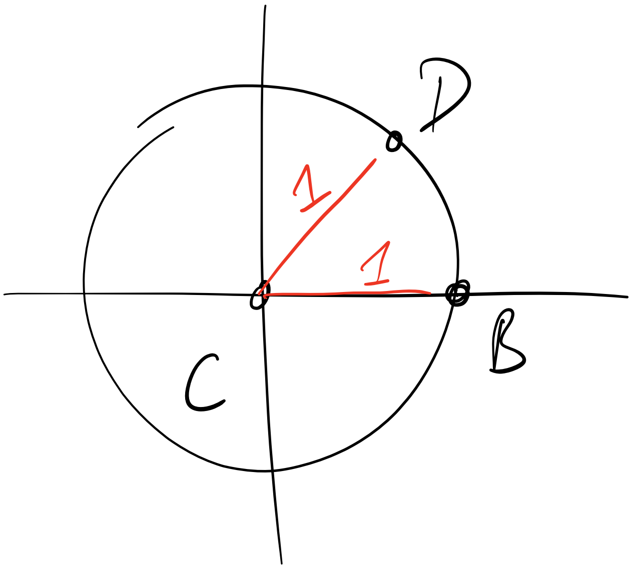
$\vec{BC} = \begin{pmatrix}0\\2\end{pmatrix}$ $\|\vec{BC}\| = \sqrt{0^2+2^2} = 2$

$D = \left(\frac{\sqrt{2}}{2}; \frac{\sqrt{2}}{2}\right)$ $B = (1;0)$ $C = (0;0)$

$$\|\vec{DC}\| = \sqrt{\left(-\frac{\sqrt{2}}{2}\right)^2 + \left(-\frac{\sqrt{2}}{2}\right)^2} = \sqrt{\frac{2}{4}+\frac{2}{4}} = \sqrt{\frac{4}{4}} = 1$$

$$\|\vec{BC}\| = \sqrt{(-1)^2+0^2} = \sqrt{1} = 1$$

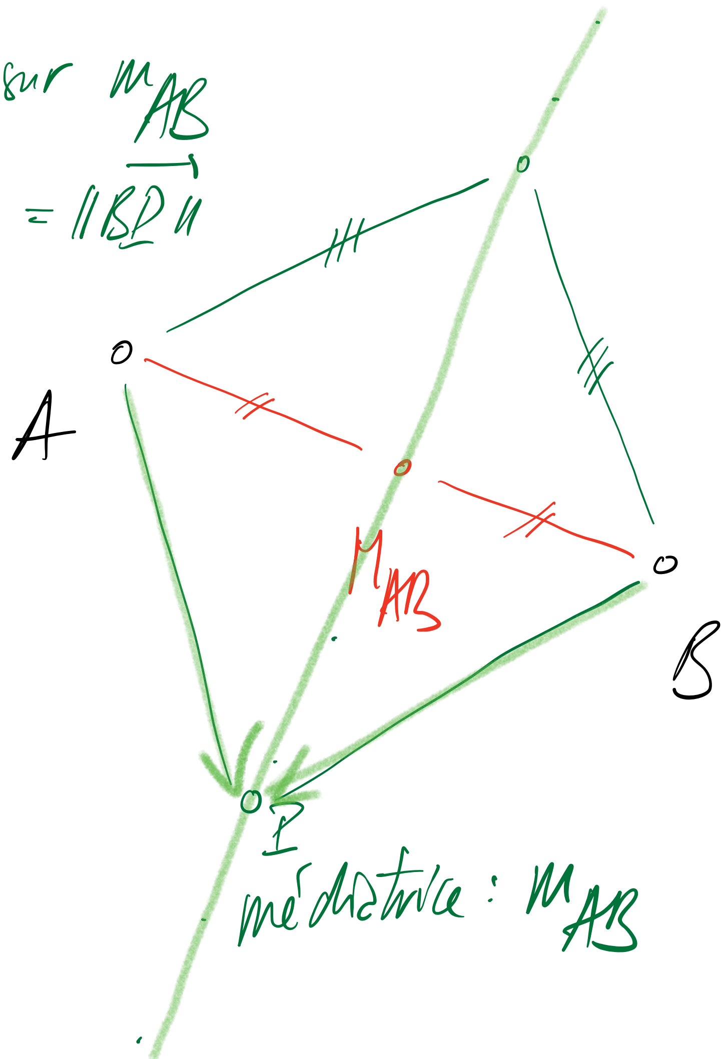
D et B sont sur le cercle unité centré en $(0;0)$



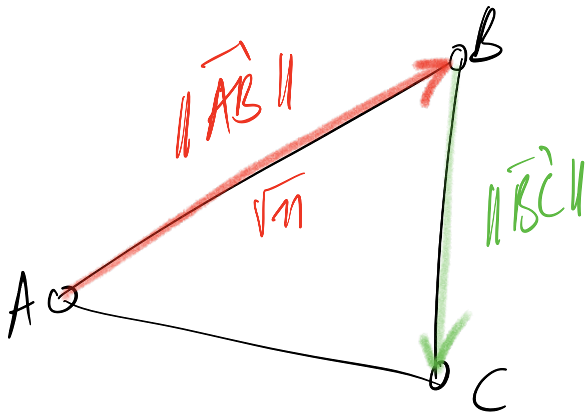
P est sur m_{AB}

$\iff \|\vec{AP}\| = \|\vec{BP}\|$

$M_{AB} = « \frac{A+B}{2} »$



$A(1;3;-2)\quad B(2;2;1)\quad C(-7;-2;-1)$



$$\vec{AB} = \begin{pmatrix} 2-1 \\ 2-3 \\ 1-(-2) \end{pmatrix} = \begin{pmatrix} 1 \\ -1 \\ 3 \end{pmatrix}$$

« B − A »

$$\Rightarrow \|\vec{AB}\| = \sqrt{1^2+(-1)^2+3^2}$$

$$= \sqrt{1+1+9} = \sqrt{11}$$

$$\simeq \underline{\underline{3{,}32}}$$

$$\left\| \begin{pmatrix} x_1 \\ x_2 \\ x_3 \end{pmatrix} \right\| = \sqrt{x_1^2+x_2^2+x_3^2}$$