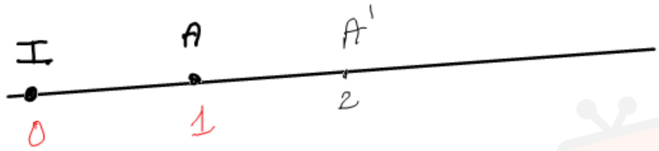
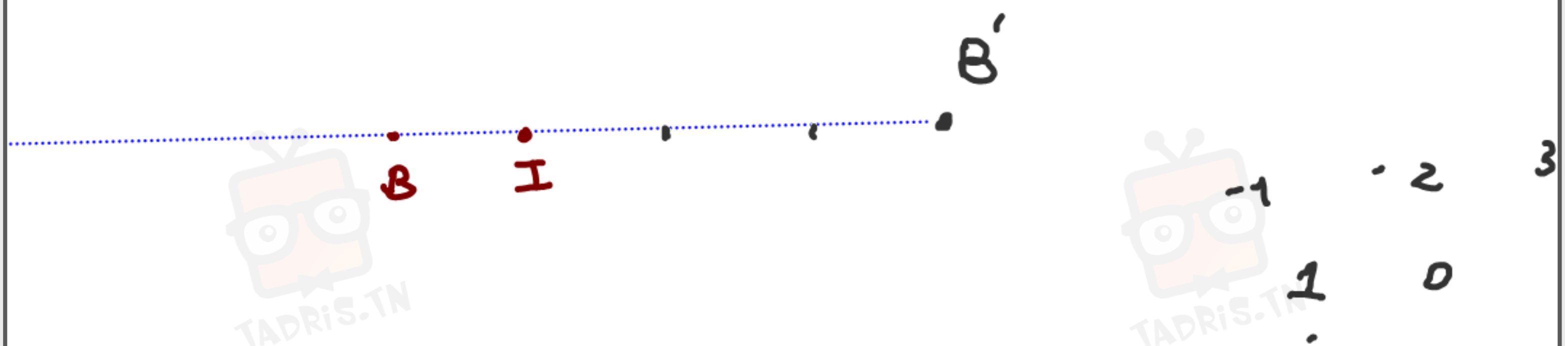
$k \in \mathbb{R}^*$

$$h_{(I,k)}(M) = M' \Leftrightarrow \vec{IM'} = k\,\vec{IM}$$

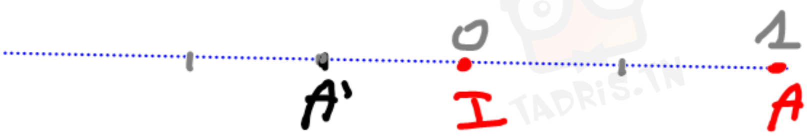
$$h_{(I,2)}(A) = A' \Leftrightarrow \vec{IA'} = 2\,\vec{IA}$$



$$h_{(I,-3)}(B) = B' \Leftrightarrow \vec{IB'} = -3\,\vec{IB}$$

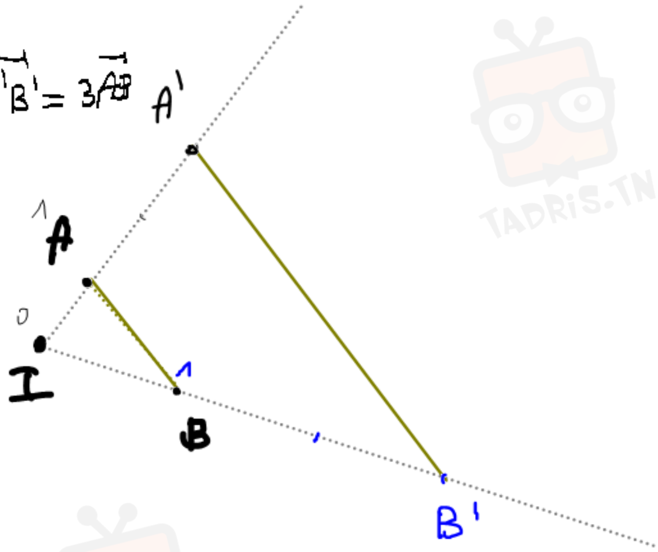


$$h_{(I,-\frac{1}{2})}(A) = A' \Leftrightarrow \vec{IA'} = -\frac{1}{2}\,\vec{IA}$$



$$\left.\begin{array}{l} h_{(I,3)}(A) = A' \\ h_{(I,3)}(B) = B' \end{array}\right\}$$

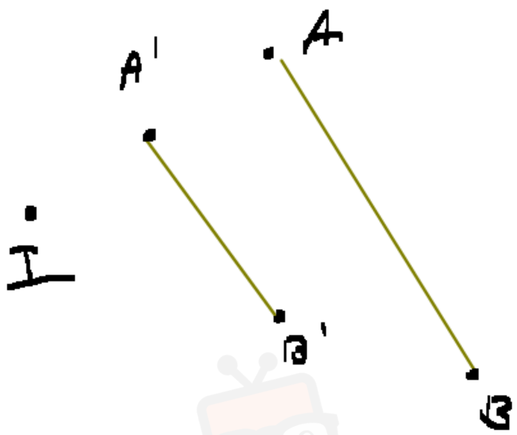
$\overrightarrow{A'B'} = 3\overrightarrow{AB}$



$h_{(I,\frac{1}{2})}(A) = A'$

$h_{(I,\frac{1}{2})}(B) = B'$

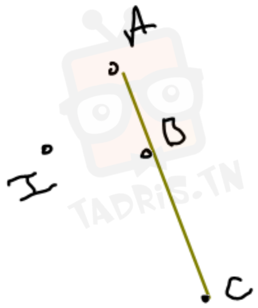
$\overrightarrow{A'B'} = \frac{1}{2}\overrightarrow{AB}$



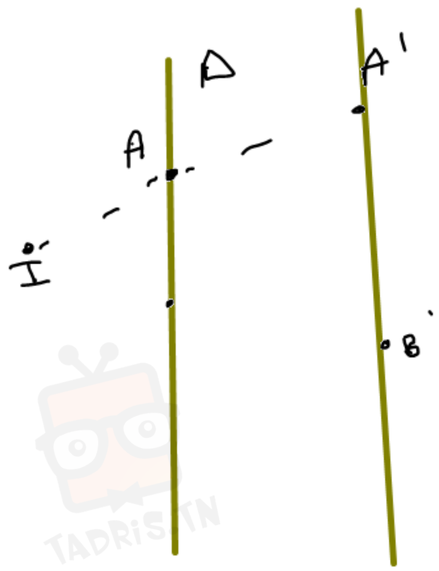
$k \in \mathbb{R}^*$

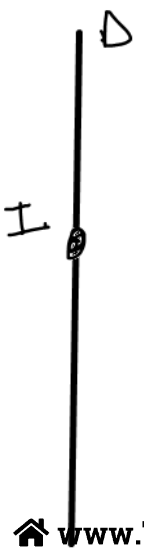
$$\left.\begin{array}{l} h_{(I,k)}(A) = A' \\ h_{(I,k)}(B) = B' \end{array}\right\}$$

$\overrightarrow{A'B'} = k\,\overrightarrow{AB}$



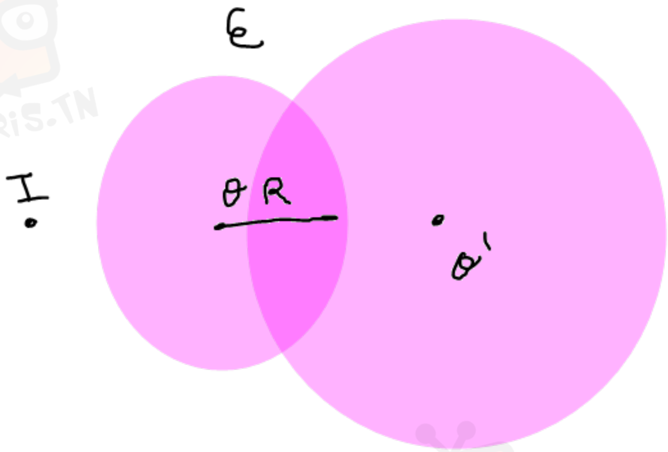
$$h_{(I,2)}(\Delta)=\Delta'$$



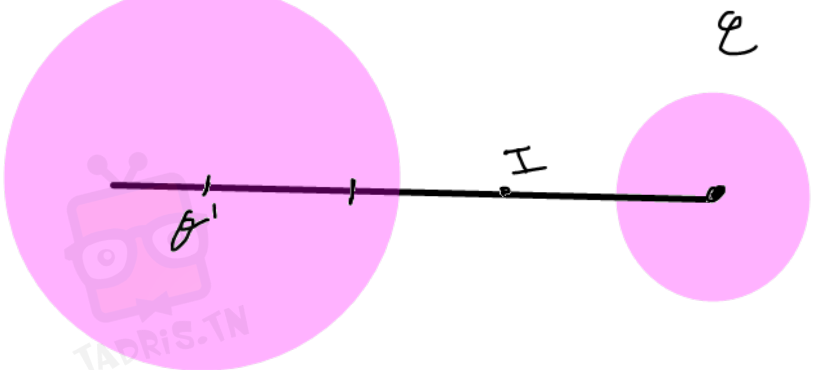


$$h_{(I,k)}(\Delta)=\Delta$$

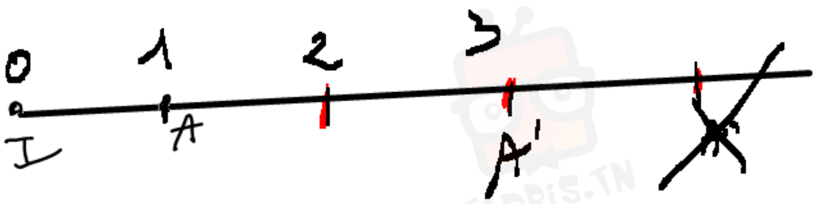
$h_{(I,2)}(\mathcal{C})=\mathcal{C}'$



$h_{(I,-2)}(\mathcal{C})=\mathcal{C}'$



$h_{(I,3)}(A)=A'$



Soit ABC un triangle, I milieu de[CB] et les point E et F définie par

E barycentre de (A,-2) , (B,3) et F tel que $\overrightarrow{AF} = 3\overrightarrow{AC}$

On désigne par h l'homothétie e centre A et de rapport 3

1- Déterminer h(B) et h(C)

2- La droite (AI) coupe (EF)en J

a- Montrer h(I) = J

b- Déduire J milieu de [EF]

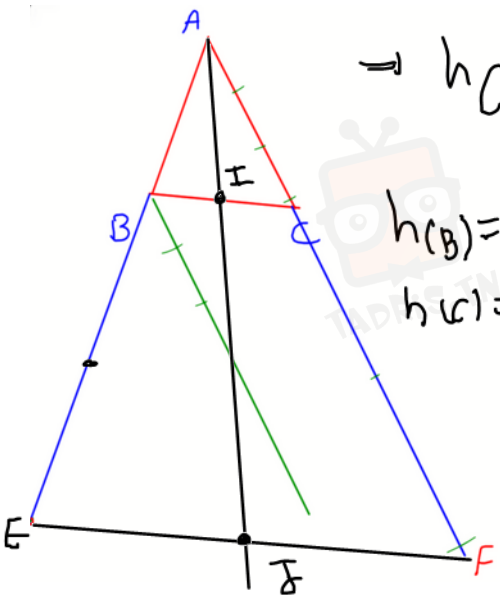
h l'homothétie de centre A et de rapport 3

1) $E = \text{bary}\{(A,-2)\ (B,3)\}$

$\Rightarrow \boxed{\overrightarrow{AE}} = \dfrac{3}{3-2}\ \overrightarrow{AB} = \boxed{3\overrightarrow{AB}}$

$\Rightarrow h(B) = E$

$\overrightarrow{AF} = 3\overrightarrow{AC} \Rightarrow h(C) = F$



A centre de h

$\Rightarrow h((AI)) = (AI)$

$\left.\begin{array}{l} h(B) = E \\ h(C) = F \end{array}\right\} h((BC)) = (EF)$

$I \in (AI) \Rightarrow h(I) \in h((AI)) = (AI)$

$I \in (BC) \Rightarrow h(I) \in h((BC)) = (EF)$

or $(AI) \cap [EF] = \{J\}$

d'où $h(I) = J$

b)

$\left.\begin{array}{l} h(B) = E \\ h(I) = J \\ h(C) = F \\ I = B * C \end{array}\right\} J = E * F$

Soit ABC un triangle, I milieu de[CB] et les point E et F définie par

E barycentre de (A,-2) , (B,3) et F tel que $\overrightarrow{AF} = 3\overrightarrow{AC}$

On désigne par h l'homothétie e centre A et de rapport 3

1- Déterminer h(B) et h(C)

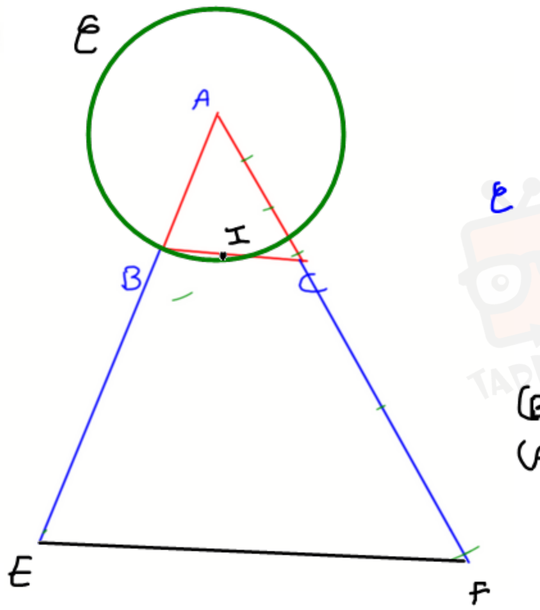
2- La droite (AI) coupe (EF)en J

a- Montrer h(I) = J

b- Déduire J milieu de [EF]

3- Soit C le cercle de centre A passant par B

Déterminer et construire C′ = h(C)



$h_{(A,3)}$

𝒞 A	A 𝒞'
B	E
C	F
I	J
(BC)	(EF)
(AI)	(AI)

$h(A) = A$

$h(B) = E$

𝒞 de centre A et passant par B

$\mathcal{C}' = h(\mathcal{C})$ est le cercle de centre A et passant par E