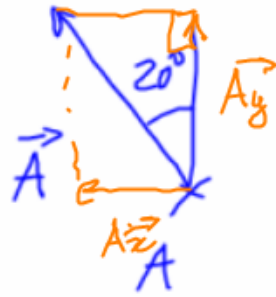
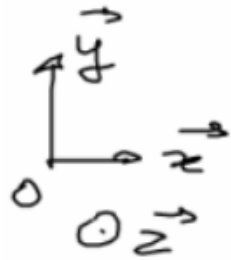
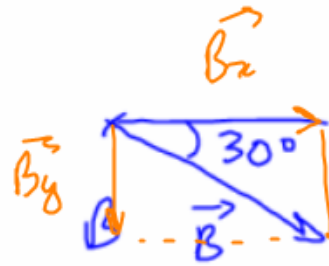


TOA $\tan d = \frac{\text{opp}}{\text{adj}}$ 1/8



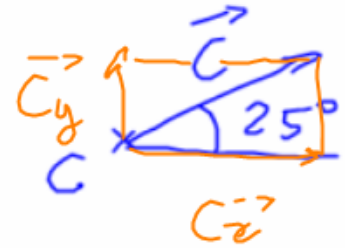
$$\|\vec{A}\| = 20 \text{ N}$$

$$\vec{A} = \begin{pmatrix} -20 \sin 20 \\ 20 \cos 20 \\ 0 \end{pmatrix} = \begin{pmatrix} : \\ : \\ : \end{pmatrix}$$



$$\|\vec{B}\| = 100 \text{ N}$$

$$\vec{B} = \begin{pmatrix} 100 \cos 30 \\ -100 \sin 30 \\ 0 \end{pmatrix}$$



$$\|\vec{C}\| = \frac{60}{\cos 25}$$

$$\vec{C} = \begin{pmatrix} 60 \\ 60 \tan 25 \\ 0 \end{pmatrix}$$



$$\|\vec{D}\| = 200 \text{ N}$$

$$\vec{D} = \begin{pmatrix} -200 \cos 36,9 \\ 120 \\ 0 \end{pmatrix}$$

$$\theta = \sin^{-1} \left(\frac{120}{200} \right) = 36,9^\circ$$



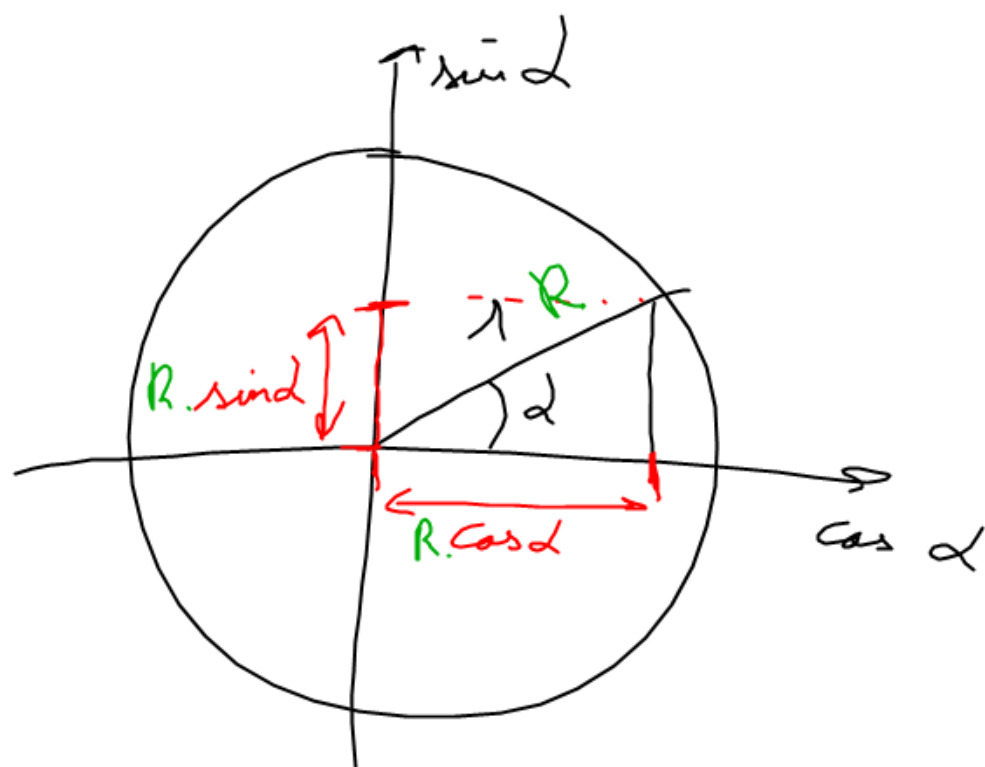
$$\|\vec{E}\| = \sqrt{40^2 + 80^2} \approx 89,5$$

$$\vec{E} = \begin{pmatrix} -40 \\ -80 \\ 0 \end{pmatrix}$$

$$d = \tan^{-1} \left(\frac{40}{80} \right) \approx 26,5^\circ$$

$$\frac{60 \sin 25}{\cos 25}$$

$$\tan d = \frac{\sin d}{\cos d}$$



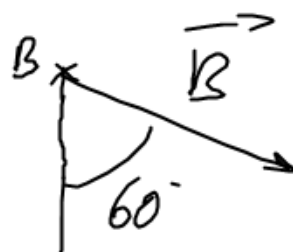
Pour jeudi

3/8



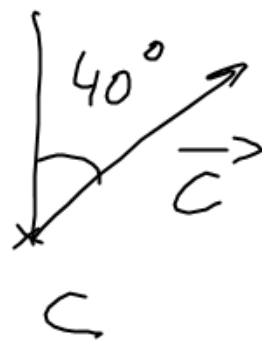
$$\|\vec{A}\| = 240 \text{ N}$$

$$\vec{A} = \begin{pmatrix} \cdot \\ \cdot \\ \cdot \end{pmatrix} = \begin{pmatrix} \cdot \\ \cdot \\ \cdot \end{pmatrix}$$



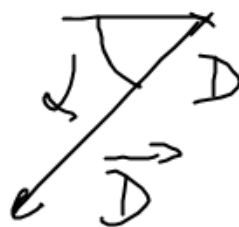
$$\|\vec{B}\| = 120 \text{ N}$$

$$\vec{B} = \begin{pmatrix} \cdot \\ \cdot \\ \cdot \end{pmatrix} = \begin{pmatrix} \cdot \\ \cdot \\ \cdot \end{pmatrix}$$



$$\|\vec{C}\| =$$

$$\vec{C} = \begin{pmatrix} \cdot \\ 80 \\ \cdot \end{pmatrix}$$



$$\|\vec{D}\| = 1000 \text{ N}$$

$$\alpha =$$

$$\vec{D} = \begin{pmatrix} \cdot \\ -600 \\ \cdot \end{pmatrix} = \begin{pmatrix} \cdot \\ \cdot \\ \cdot \end{pmatrix}$$

$$= \begin{pmatrix} \cdot \\ \cdot \\ \cdot \end{pmatrix}$$

unité moment d'une force: N.m

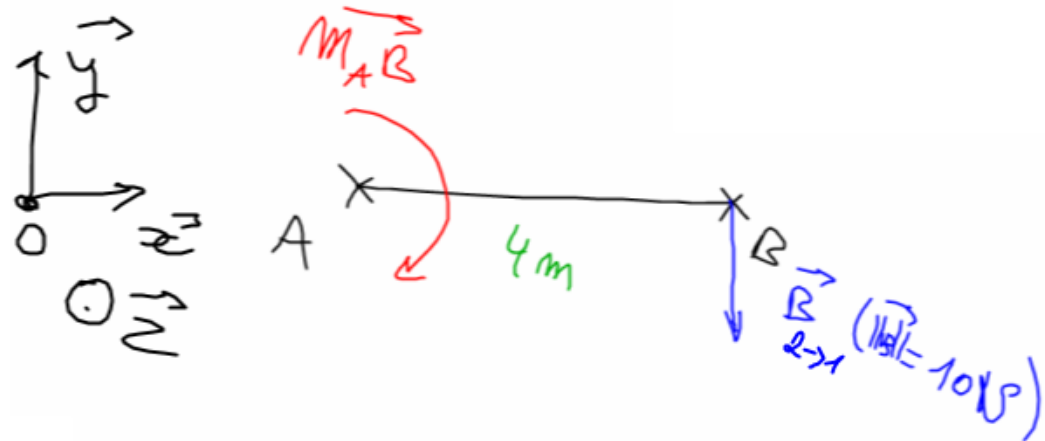
$$M = \underbrace{F \cdot d}_h$$

défini dans le plan $\vec{x} \wedge \vec{y}$

$$\vec{F} \wedge \vec{d} = \begin{pmatrix} 10 & 2 & 0 \\ 5 & 4 & 0 \end{pmatrix} = \begin{pmatrix} 2 \cdot 0 - 0 \cdot 4 \\ 0 \cdot 5 - 10 \cdot 0 \\ 10 \cdot 4 - 2 \cdot 5 \end{pmatrix} = \begin{pmatrix} 0 \\ 0 \\ 40 - 10 \end{pmatrix}$$

$$\vec{x} \wedge \vec{y} = \begin{pmatrix} 1 & 0 & 0 \\ 0 & 1 & 0 \end{pmatrix} = \begin{pmatrix} 0 \\ 0 \\ 1 \end{pmatrix} = \vec{z}$$



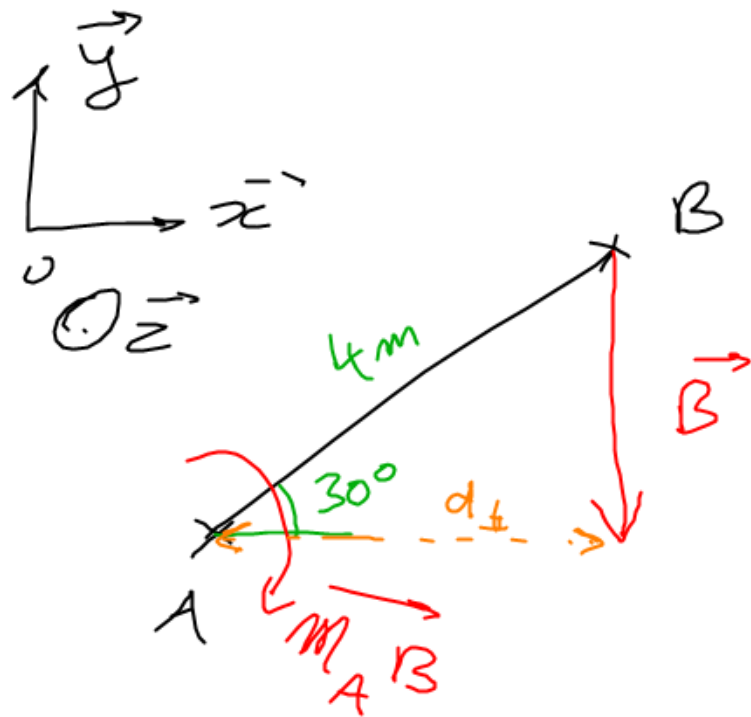


$$\vec{B}_{2 \rightarrow 1} = \begin{pmatrix} 0 \\ -10 \\ 0 \end{pmatrix}$$

$$\|\vec{M}_{A \rightarrow B}\| = 10 \cdot 4^\odot \\ = 40 \text{ N.m}$$

$$\vec{M}_{A \rightarrow B} = \begin{pmatrix} 0 \\ 0 \\ -40 \end{pmatrix}$$

$$\vec{B}_{2 \rightarrow 1} = \left\{ \vec{B}_{2 \rightarrow 1}, \vec{M}_{A \rightarrow B} \right\}_B = \begin{pmatrix} 0 & 0 \\ -10 & 0 \\ 0 & 0 \end{pmatrix}_B = \left\{ \vec{B}_{2 \rightarrow 1}, \vec{M}_A \right\}_A = \begin{pmatrix} 0 & 0 \\ -10 & 0 \\ 0 & -40 \end{pmatrix}_A$$



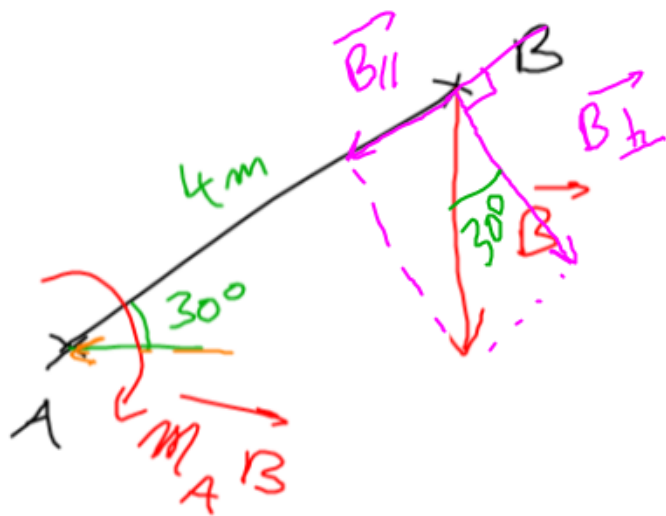
$$\|\vec{B}\| = 10\text{ N}$$

$$\|\vec{M}\| = F \cdot d$$

$$\|\vec{M}\| = 10 \cdot 4 \cdot \cos 30$$

$$= 34,6\text{ N}\cdot\text{m}$$

$$\vec{M}_{B/A} = \begin{pmatrix} 0 \\ 0 \\ -34,6 \end{pmatrix}$$

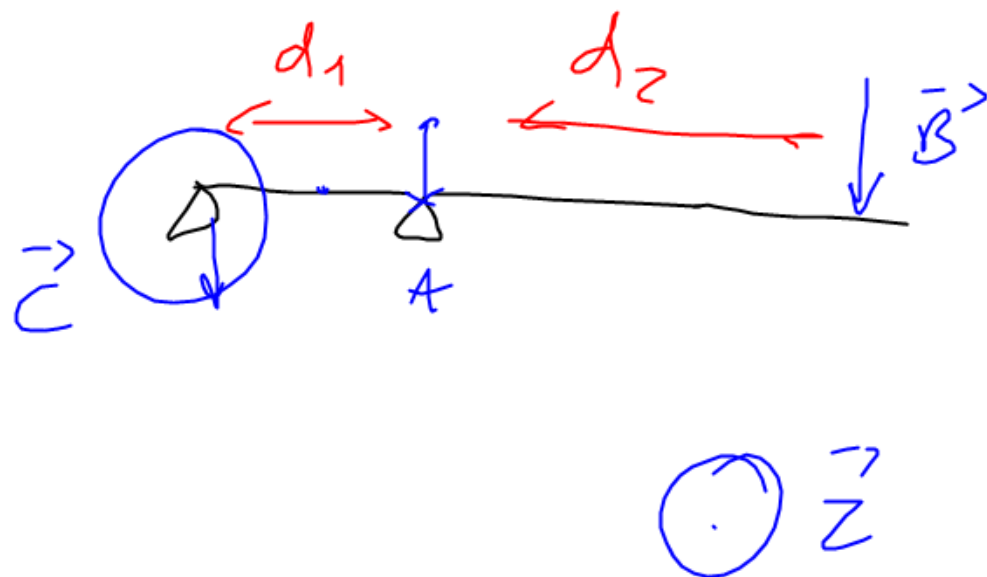


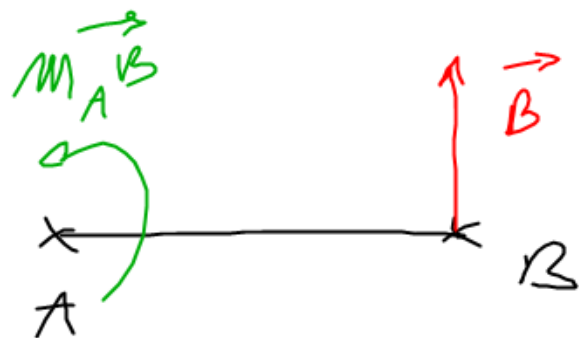
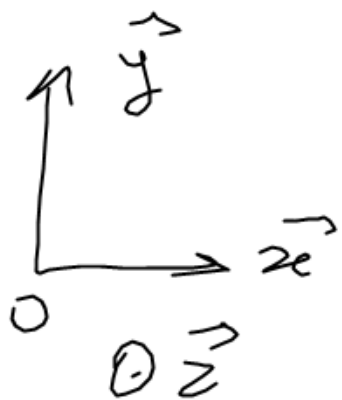
$$\|\vec{M}\| = B_{\perp} \cdot d$$

$$= 10 \cdot \cos 30 \cdot 4$$

$$= 34,6\text{ N}\cdot\text{m}$$

Pied de biche





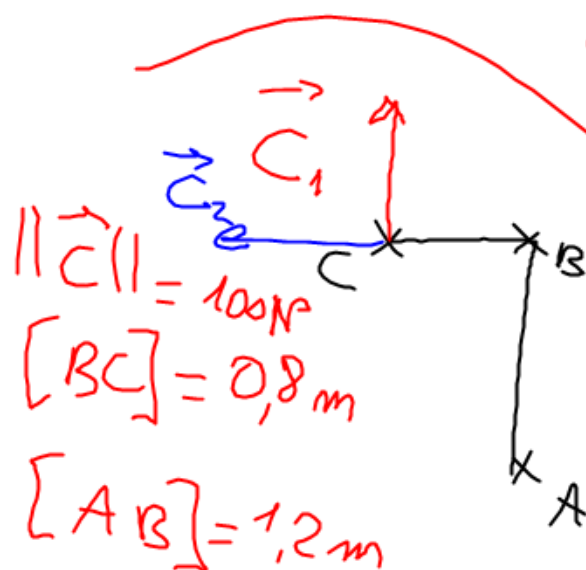
$$\|\vec{B}\| = 100 \text{ N}$$

$$[AB] = 1,2 \text{ m}$$

$$\|\vec{M}_{AB}\| = 100 \cdot 1,2 = 120 \text{ N.m}$$

$$\vec{M}_{AB} = \begin{pmatrix} 0 \\ 0 \\ 120 \end{pmatrix}$$

$\vec{M}_{BB} = \vec{0}$
car $\vec{B}$ est
une force



$$\|\vec{C}\| = 100 \text{ N}$$

$$[BC] = 0,8 \text{ m}$$

$$[AB] = 1,2 \text{ m}$$

$$\|\vec{M}_{AC_1}\| =$$

$$\vec{M}_{AC_1} = \begin{pmatrix} \vdots \\ \vdots \end{pmatrix}$$

$$\|\vec{M}_{AC_2}\| =$$

$$\vec{M}_{AC_2} = \begin{pmatrix} \vdots \\ \vdots \end{pmatrix}$$