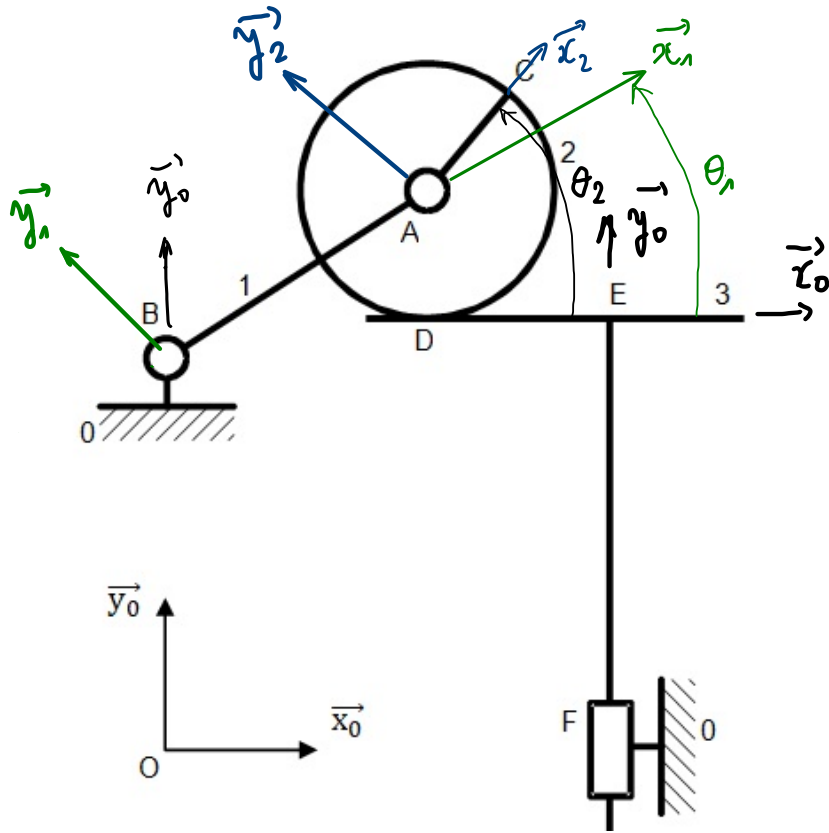


①



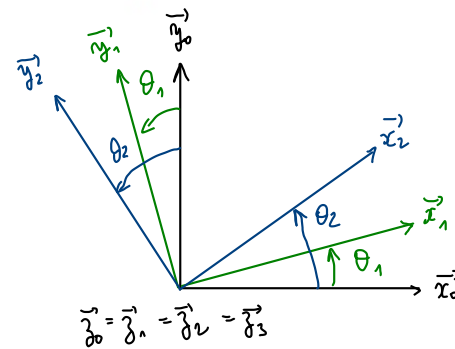
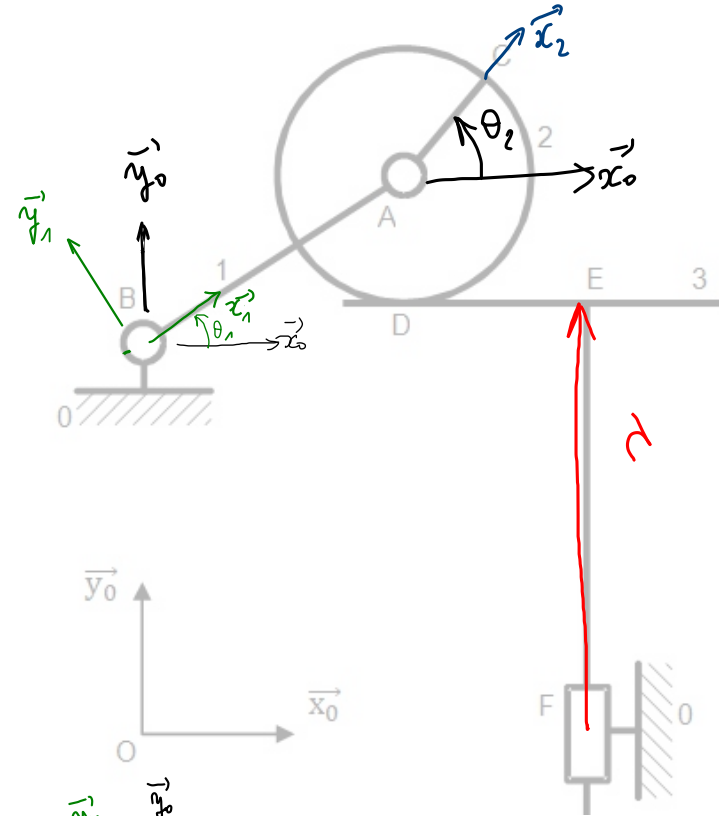
$$R_0 = (O, \vec{x}_0, \vec{y}_0, \vec{z}_0)$$

$$R_1 = (B, \vec{x}_1, \vec{y}_1, \vec{z}_1)$$

$$R_2 = (A, \vec{x}_2, \vec{y}_2, \vec{z}_2)$$

$$R_3 = (F, \vec{x}_0, \vec{y}_0, \vec{z}_0)$$

12h39



12h45

② Fermeture géométrique :

$$\vec{OB} + \vec{BA} + \vec{AD} + \vec{DE} + \vec{EF} + \vec{FD} = \vec{0}$$

$$b \cdot \vec{y}_0 + e \vec{x}_1 + -R \vec{y}_0 + a \vec{x}_0 - \lambda \vec{y}_0 - a \vec{x}_0 = 0$$

sur \vec{y}_0 : $b + e \cdot \sin(\theta_1) - R - \lambda = 0$ $\lambda = b + e \cdot \sin(\theta_1) - R$

à $t=0$

$$\lambda(0) = b + e \sin(-90^\circ) - R$$

$$\lambda(0) = 13,5 - 9,5 \cdot 1 - 4 = 0 \quad (\text{E en F})$$

$$\lambda_{\max} = b + e - R$$

pour $\theta_1 = 90^\circ$ (demi-tour)

$$\lambda_{\max} = 13,5 + 9,5 - 4$$

$$\lambda_{\max} = 20 \text{ mm} \quad (2e) \quad 12h51$$