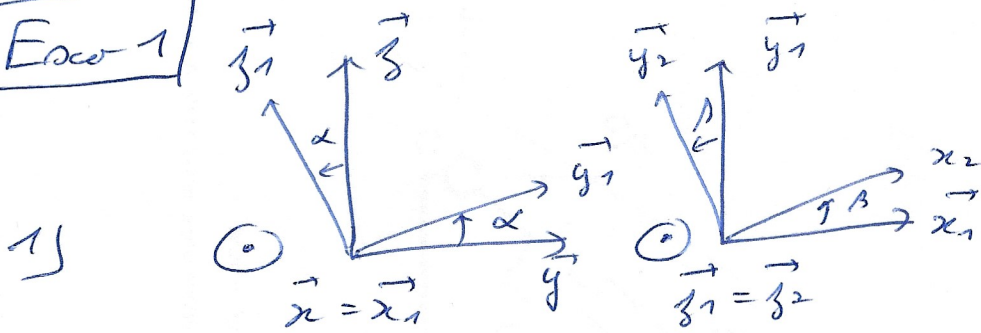


DS PCS 1

Exo 1



2

2) $\Omega_{1/2} = \alpha \vec{x}_1 + \beta \vec{y}_1$

4

3) $\vec{OG} = -a \vec{y}_1 + b \vec{y}_1 + c \vec{x}_2$

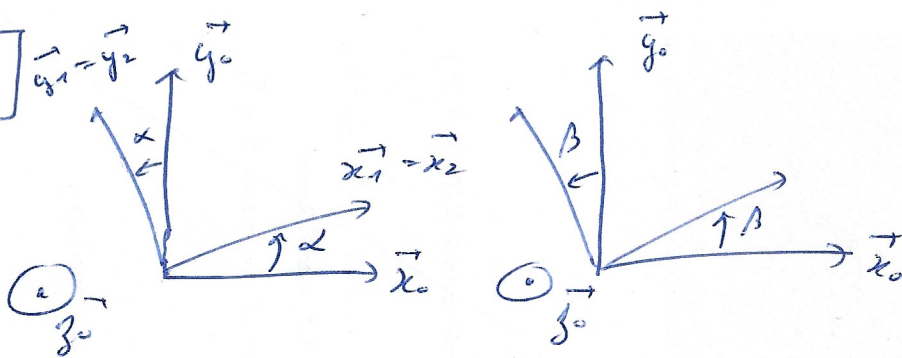
3

$$\left(\frac{d\vec{x}_2}{dt}\right)_0 = \left(\frac{d\vec{x}_2}{dt}\right)_1 + \Omega_{1/2} \wedge \vec{x}_2 = \beta \dot{\vec{y}}_2 + \alpha \vec{x}_1 \wedge (\cos \beta \vec{x}_1 + \sin \beta \vec{y}_1)$$

$$= \beta \dot{\vec{y}}_2 + \alpha \sin \beta \vec{z}_1 \quad (x_c)$$

$$\vec{v}(G \in \Sigma_0) = -a \dot{\vec{y}}_1 - b \dot{\vec{y}}_1 + c \beta \dot{\vec{y}}_2 + c \alpha \sin \beta \vec{z}_1$$

Exo 2



2

1)

1

2) $\vec{OB} = \vec{OC} + \vec{CB} \Rightarrow \lambda \vec{x}_1 = -a \vec{x}_0 + b \vec{x}_3$

$$\begin{cases} \vec{x}_1 = \cos \alpha \vec{x}_0 + \sin \alpha \vec{y}_0 \\ \vec{x}_3 = \cos \beta \vec{x}_0 + \sin \beta \vec{y}_0 \end{cases}$$

3

$$\Rightarrow \begin{cases} \lambda \cos \alpha = -a + b \cos \beta \\ \lambda \sin \alpha = b \sin \beta \end{cases}$$

$$\lambda = \sqrt{(b \cos \beta - a)^2 + (b \sin \beta)^2}$$

$$\lambda = \sqrt{b^2 - 2ab \cos \beta + a^2}$$