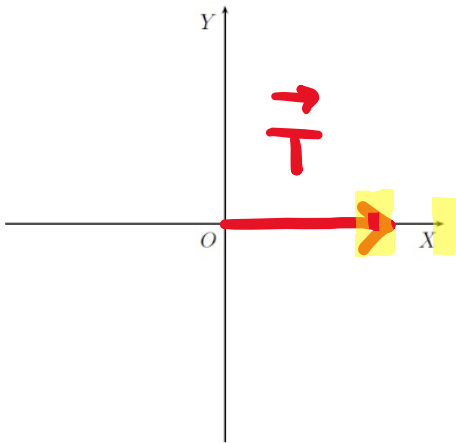


Soit $T = \|\vec{T}\|$ la norme du vecteur \vec{T} .

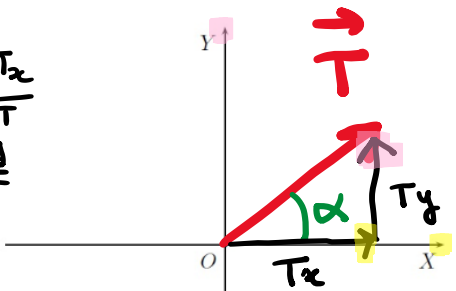
Projeter un vecteur dans un repère

Rappel : $\begin{cases} \cos x = \frac{\text{côté adjacent}}{\text{hypoténuse}} \\ \sin x = \frac{\text{côté opposé}}{\text{hypoténuse}} \end{cases}$



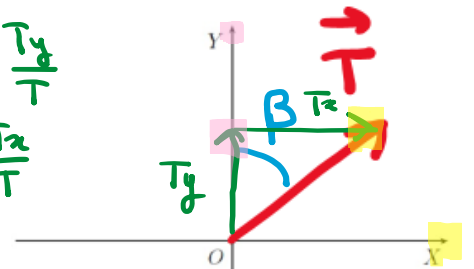
$$\vec{T} \begin{pmatrix} +T \\ 0 \end{pmatrix} \text{ ou } \vec{T} = +T \cdot \vec{u}_x + 0 \cdot \vec{u}_y$$

$$\begin{aligned} \cos \alpha &= \frac{T_x}{T} \\ \sin \alpha &= \frac{T_y}{T} \end{aligned}$$

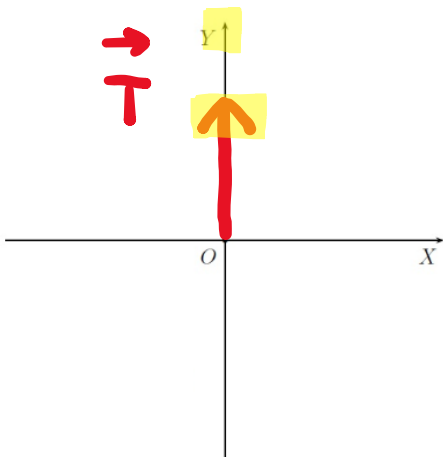


$$\vec{T} \begin{pmatrix} +T \cos \alpha \\ +T \sin \alpha \end{pmatrix} \Leftrightarrow \vec{T} = T \cos \alpha \vec{u}_x + T \sin \alpha \vec{u}_y$$

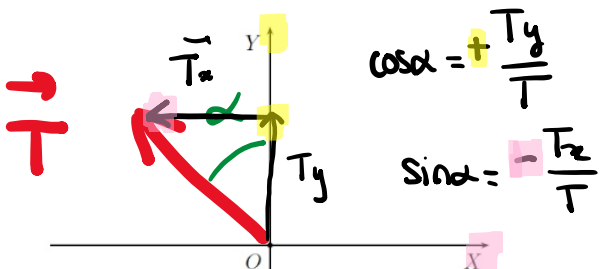
$$\begin{aligned} \cos \beta &= \frac{T_y}{T} \\ \sin \beta &= \frac{T_x}{T} \end{aligned}$$



$$\vec{T} \begin{pmatrix} T \sin \beta \\ T \cos \beta \end{pmatrix} \Leftrightarrow \vec{T} = T \sin \beta \vec{u}_x + T \cos \beta \vec{u}_y$$

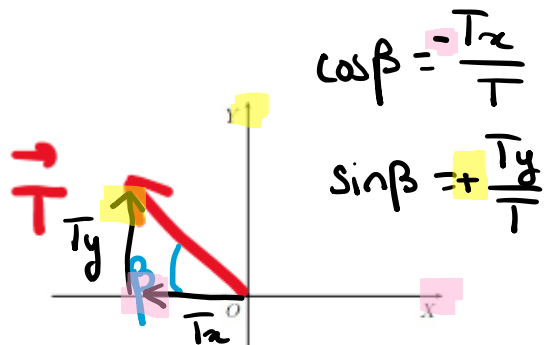


$$\vec{T} \begin{pmatrix} 0 \\ +T \end{pmatrix} \Leftrightarrow \vec{T} = 0 \cdot \vec{u}_x + T \cdot \vec{u}_y$$



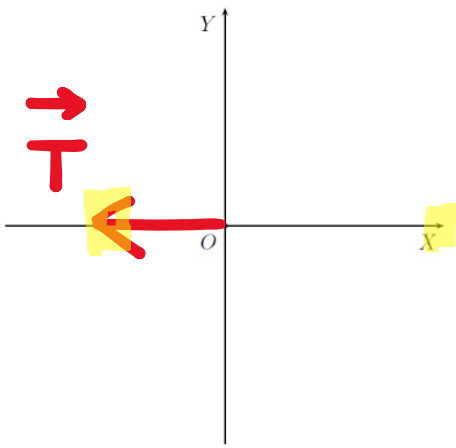
$$\begin{aligned} \cos \alpha &= +\frac{T_y}{T} \\ \sin \alpha &= -\frac{T_x}{T} \end{aligned}$$

$$\vec{T} \begin{pmatrix} -T \sin \alpha \\ T \cos \alpha \end{pmatrix} \Rightarrow \vec{T} = -T \sin \alpha \vec{u}_x + T \cos \alpha \vec{u}_y$$



$$\begin{aligned} \cos \beta &= -\frac{T_x}{T} \\ \sin \beta &= +\frac{T_y}{T} \end{aligned}$$

$$\vec{T} \begin{pmatrix} -T \cos \beta \\ T \sin \beta \end{pmatrix} \Rightarrow \vec{T} = -T \cos \beta \vec{u}_x + T \sin \beta \vec{u}_y$$



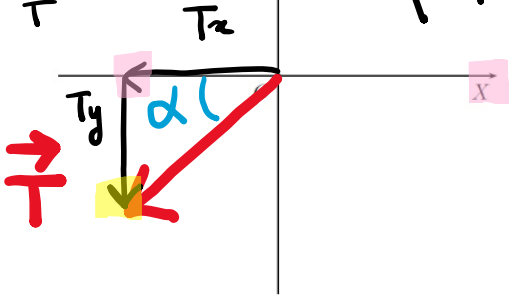
$$\vec{T} \begin{pmatrix} -T \\ 0 \end{pmatrix}$$

$$\vec{T} = -T\vec{u}_x + 0\cdot\vec{u}_y$$

$$\cos\alpha = -\frac{T_x}{T}$$

$$\sin\alpha = -\frac{T_y}{T}$$

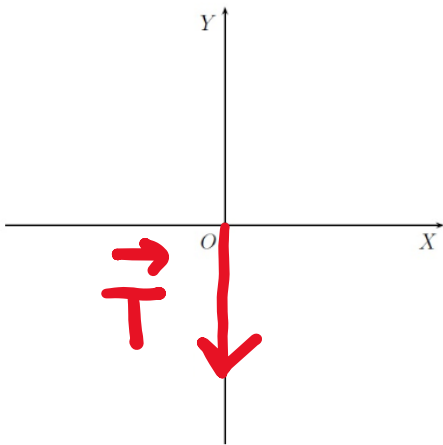
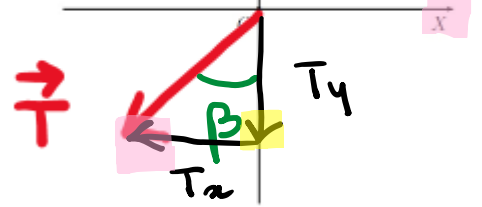
$$\vec{T} \begin{pmatrix} -T\cos\alpha \\ -T\sin\alpha \end{pmatrix}$$



$$\cos\beta = -\frac{T_y}{T}$$

$$\sin\beta = -\frac{T_x}{T}$$

$$\vec{T} \begin{pmatrix} -T\sin\beta \\ -T\cos\beta \end{pmatrix}$$

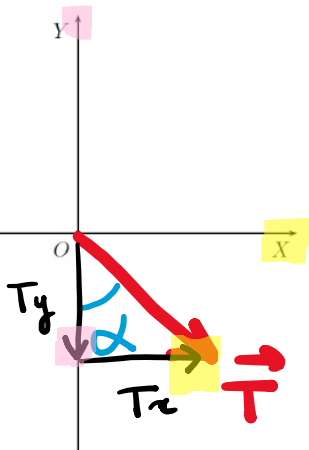


$$\vec{T} \begin{pmatrix} 0 \\ -T \end{pmatrix}$$

$$\cos\alpha = -\frac{T_y}{T}$$

$$\sin\alpha = +\frac{T_x}{T}$$

$$\vec{T} \begin{pmatrix} T\sin\alpha \\ -T\cos\alpha \end{pmatrix}$$



$$\cos\beta = +\frac{T_x}{T}$$

$$\sin\beta = -\frac{T_y}{T}$$

$$\vec{T} \begin{pmatrix} +T\cos\beta \\ -T\sin\beta \end{pmatrix}$$

