$T(x) = T\begin{bmatrix}6\\6\\6\end{bmatrix}$ $(*)$ $\quad B = \left\{\begin{bmatrix}1\\0\\0\end{bmatrix}\begin{bmatrix}1\\0\\1\end{bmatrix}\begin{bmatrix}0\\1\\1\end{bmatrix}\right\}$

$(*)$ $T[v]$ se interpreta como:

→ obtener $[v]^B$

→ aplicarle $[T_B^E]$

$M_B^E = \begin{bmatrix}1 & 1 & 0\\3 & 1 & -2\\0 & 1 & 1\end{bmatrix}$ $\quad E$ es la canónica

$$M_B^E[v]^B = \begin{bmatrix}0\\0\\0\end{bmatrix}$$

$$\Rightarrow [v]^B = \begin{bmatrix}\alpha\\\beta\\\gamma\end{bmatrix} \Rightarrow v = \alpha\begin{bmatrix}1\\0\\0\end{bmatrix} + \beta\begin{bmatrix}1\\0\\1\end{bmatrix} + \gamma\begin{bmatrix}0\\1\\1\end{bmatrix}$$

→ ¡¡A triangular!!

$$\begin{bmatrix}1 & 1 & 0\\3 & 1 & -2\\0 & 1 & 1\end{bmatrix} F_2 - 3F_1$$

$$\begin{bmatrix}1 & 1 & 0\\0 & -2 & -2\\0 & 1 & 1\end{bmatrix} F_3 + \tfrac{1}{2}F_2$$

$$\begin{bmatrix}1 & 1 & 0\\0 & -2 & -2\\0 & 0 & 0\end{bmatrix} -\tfrac{1}{2}F_2 \text{ por comodidad}$$

$$\begin{bmatrix}1 & 1 & 0\\0 & 1 & 1\\0 & 0 & 0\end{bmatrix} \Rightarrow \begin{matrix}\alpha + \beta = 0\\ \beta + \gamma = 0\end{matrix}$$

$$\Rightarrow \underline{\beta = -\alpha = -\gamma}$$

$$\begin{cases}\beta = -\alpha\\ \beta = -\gamma\end{cases} \rightarrow \begin{matrix}\alpha = -\beta\\ \gamma = -\beta\end{matrix}$$

$$[v]^B = \begin{bmatrix}-\beta\\\beta\\-\beta\end{bmatrix}$$ → este resultado

→ No sean como Iván

$$v = -\beta\begin{bmatrix}1\\0\\0\end{bmatrix} + \beta\begin{bmatrix}1\\0\\1\end{bmatrix} - \beta\begin{bmatrix}0\\1\\1\end{bmatrix} =$$

$$= \beta\begin{bmatrix}0\\-1\\0\end{bmatrix}$$

$$\rightarrow S_g = \underbrace{\begin{bmatrix}6\\6\\6\end{bmatrix}}_{S_p} + \underbrace{\beta\begin{bmatrix}0\\-1\\0\end{bmatrix}}_{S_h}, \ \beta \in \mathbb{R}$$

Please Stand by...