$$\left(\begin{array}{l} T = (1,1,1) = (0,1,1) \\ T = (0,1,1) = (0,-1,1) \end{array} \right\} \longrightarrow \text{EXISTEN INFINITAS. } T.$$

$\rightarrow T = (2,-1,-1) = (0,5,-1)$

$$\left\{ \begin{array}{l} \overbrace{(1,0,0)} = (1,1,1) - (0,1,1) \\ T(1,0,0) = T(1,1,1) - T(0,1,1) \\ \qquad = (0,1,1) - (0,-1,1) \\ \boxed{T(1,0,0) = (0,2,0)} \end{array} \right.$$

$$\left(\begin{array}{ccc|c} 1 & 0 & 2 & 0 \\ 1 & 1 & -1 & 0 \\ 1 & 1 & -1 & 0 \end{array} \right) \sim \left(\begin{array}{ccc|c} 1 & 0 & 2 & 0 \\ 0 & 1 & -3 & 0 \\ 0 & 0 & 0 & 0 \end{array} \right) \rightarrow \left(\begin{array}{cc|c} 1 & 0 & -2 \\ 0 & 1 & 3 \\ 0 & 0 & 0 \end{array} \right)$$

$$(2,-1,-1) = \alpha (1,1,1) + \beta (0,1,1)$$

$\alpha = 2 \quad \rightarrow \quad (2,-1,-1) = 2(1,1,1) - 3(0,1,1) \leftarrow$

$\beta = -3$

$T(2,-1,-1) = 2\,T(1,1,1) - 3\,T(0,1,1)$

$(0,5,-1) = 2(0,1,1) - 3(0,-1,1) = (0,5,-1)$