$$x_0 = \begin{bmatrix} -2 \\ 7 \\ 0 \end{bmatrix}$$

The Particular Solution

$$x = t \begin{bmatrix} -1 \\ -1 \\ 1 \end{bmatrix} \quad \text{Ans.}$$

RANK and NULLITY:-

The Common dimension of the Row space
and column space of a matrix A
is called the Rank of A and is
denoted by Rank (A).

The dimension of the nullspace
of A is called the nullity of A and
is denoted by nullity (A).