Step-1

Construct a matrix with $(1,0,1)$ and $(1,2,0)$ as a basis for its row space and its column space.

The first row of the matrix is $(1,0,1)$ and the second row of the matrix is $(1,2,0)$.

Now, to construct the third row, the third row is 2 * row 1 + 2 * row 2.

Therefore, the matrix is $A=\begin{bmatrix}1&0&1\\1&2&0\\4&4&2\end{bmatrix}$

Here, row 1, 2 and 3 are dependent and 1, 2 are independent.

Step-2

The transpose of the matrix is $A^T=\begin{bmatrix}1&1&4\\0&2&4\\1&0&2\end{bmatrix}$

Here, column 1, 2 and 3 are dependent and 1, 2 are independent.

Basis for row space $A=\{(1,0,1),(1,2,0)\}$ i.e. $C(A^T)=\{(1,0,1)(1,2,0)\}$

In order to find the null space basis, set $Ax=0$.

$$\begin{bmatrix}1&0&1\\1&2&0\\4&4&2\end{bmatrix}\begin{bmatrix}x_1\\x_2\\x_3\end{bmatrix}=\begin{bmatrix}0\\0\\0\end{bmatrix}$$

$$\begin{aligned}x_1+x_3&=0\\x_1+2x_2&=0\\4x_1+4x_2+2x_3&=0\end{aligned}$$

$$\begin{aligned}x_1&=-x_3\\x_1&=-2x_2\\4x_1+4x_2+2x_3&=0\end{aligned}$$

$$\begin{aligned}4x_1-2x_1-2x_1&=0\\0&=0\end{aligned}$$

Therefore, it is not possible to find the basis for null space.

Therefore, it is not a basis for the row space and null space.

Hence it is $\boxed{\text{not}}$ possible.