Step-1

We have $u = 2 + w$,

$u + v + w = 1$

$\Rightarrow 2 + w + v + w = 1$

$\Rightarrow v + 2w = -1$

$\Rightarrow v = -1 - 2w$

Therefore, $\begin{bmatrix} u \\ v \\ w \end{bmatrix} = \begin{bmatrix} 2 + w \\ -1 - 2w \\ w \end{bmatrix}$

$= \begin{bmatrix} 2 \\ -1 \\ 0 \end{bmatrix} + w \begin{bmatrix} 1 \\ -2 \\ 1 \end{bmatrix}$

Putting $w = t$ a parameter, we get $\begin{bmatrix} u \\ v \\ w \end{bmatrix} = \begin{bmatrix} 2 \\ -1 \\ 0 \end{bmatrix} + t \begin{bmatrix} 1 \\ -2 \\ 1 \end{bmatrix}$

This is the general form of the subspace defined by $u + v + w = 1,\ u - w = 2$

This is a straight line passing through the point (2, -1, 0) and making angles with the co - ordinate axes OX, OY and OZ with the ratios 1: -2: 1.