$$W_0 = \{([0],[0])\} \tag{1}$$
$$W_1 = \{([0],[0]),([0],[1]),([0],[2])\} \tag{2}$$
$$W_2 = \{([0],[0]),([1],[0]),([2],[0])\} \tag{3}$$
$$W_3 = \{([0],[0]),([1],[1]),([2],[2])\} \tag{4}$$
$$W_4 = \{([0],[0]),([1],[2]),([2],[1])\} \tag{5}$$

$([0],[0])$ is always an element of the subspace by the subspace test. If it is the only element, the subspace is the zero subspace.

If $[1]$ is included as an element of a tuple inside the subspace, then by properties of the subspace, $[1]+[1]=[2]$ is an element of some tuple in the subspace as well. Hence, $[2]$ must be included as an element of a tuple at the same position as $[1]$ is included.

Since $[0,0] \in V$ and the position of $[1]$ in one tuple determines the position of $[2]$ in the other, while the positions of $[1]$ and $[2]$ determine the position of $[0]$, there are at most 3 tuples in W.

If there are more than three tuples, by Dirichlet's priniciple there would be duplicates of elements in some tuples, which would make it necessary to introduce other duplicates, until all 9 elements are included.