

## Step-1

It is clear that  $\mathbf{V}$  and  $\mathbf{W}$  are subspaces.

It should be further clear that  $\mathbf{V} \cap \mathbf{W} = \{0\}$ . From the geometry, it is obvious that  $\mathbf{V}$  and  $\mathbf{W}$  are not orthogonal. See the figure, drawn below:

