Product Space

Definition: Let (V, F) and (W, F) be two vector spaces over the same field F. The set $V \times W$ is called the `product space` of V and W and is denoted by $V \times W$.

- $V \times W = \{(v, w) : v \in V, w \in W\}$
- $(v_1, w_1) + (v_2, w_2) = (v_1 + v_2, w_1 + w_2)$ (vector addition)
- $\alpha(v, w) = (\alpha v, \alpha w)$ (scalar multiplication)

#EE501 - `Linear Systems Theory` at `METU`