6.1. Espacios vectoriales

$$E = (V, +, \cdot)$$

$$+ : V \times V \longrightarrow V$$

$$(\vec{u}, \vec{v}) \longmapsto \vec{w} = \vec{u} + \vec{v}$$

$$\cdot : K \times V \longrightarrow V$$

$$(\alpha, \vec{u}) \longmapsto \vec{v} = \alpha \cdot \vec{u}$$

$$+ \begin{cases} \vec{u} + \vec{v} = \vec{v} + \vec{u} \\ \vec{u} + (\vec{v} + \vec{w}) = (\vec{u} + \vec{v}) + \vec{w} \\ \vec{u} + \vec{e} = \vec{u} \quad , \forall \vec{u} \in V \\ \vec{u} + (-\vec{u}) = \vec{e} \quad , \forall \vec{u} \in V \end{cases}$$

$$\cdot \begin{cases} \alpha \cdot (\beta \cdot \vec{u}) = (\alpha \cdot \beta) \cdot \vec{u} \\ e \cdot \vec{u} = \vec{u} \quad , \exists e \in K \\ \alpha \cdot (\vec{u} + \vec{v}) = \alpha \cdot \vec{u} + \alpha \cdot \vec{v} \\ (\alpha + \beta) \cdot \vec{u} = \alpha \cdot \vec{u} + \beta \cdot \vec{u} \end{cases}$$