

1 | **Axler6.39 linear functional def**

A *linear functional* on V is a linear map from V to \mathbb{F} . In other words, a linear functional is an element of $\mathcal{L}(V, \mathbb{F})$

2 | **results**

2.1 | **Axler6.42 Riesz Representation Theorem**

Suppose V is finite-dimensional and φ is a linear functional on V . Then there is a unique vector $u \in V$ s.t.

$$\varphi(v) = \langle v, u \rangle$$

For every $v \in V$.