

VECTOR SPACE ISOMORPHISMS

Why

In some sense, \mathbb{R}^n is the only finite-dimensional vector space. In what sense?

Definition

An *isomorphism* is an invertible linear transformation between two vector spaces. Two vector spaces are *isomorphic* if there exists and isomorphism between them.

Key Result

Prop. 1. Two finite-dimensional vector spaces are isomorphic if and only if they have the same dimension.

Corollary 1. Two finite-dimensional vector spaces are isomorphic if and only if they have the same dimension.

