Definition

The *dual vector space* (or *dual space*, *algebraic dual space*) of a vector space V over a field $\mathbf{F}$ is the space $\mathcal{L}(V, \mathbf{F})$. In other words, the dual space is the set of linear functionals on V.

Notation

There are many notations in use. We will use V'. Another common notation is V^* (however we reserve this notation for adjoints, to come).

Dual Vector Spaces

Linear Functionals

Sequence Space

Real Series

Complex Numbers

Norms

Real Sequence Space

Real Arithmetic

Functionals

Real Norm

Vectors

Second Derivatives

Space Norm

Real Vectors

Real Open Sets

Real Differentiable Functions

Real Limits

Plane Norm

Plane Vector Sums and Differences

Space Vectors

N-Dimensional Space

Real Sequences

Absolute Value

Plane Vectors

Distance

Space Distance

Real Functions

Sequences

Plane Distance

Real Multiplicative Inverses

Interval Length

Real Products

Intervals

Real Space

Real Addition Inverses

Real Plane

Real Line

Rational Multiplicative Inverses

Rational Arithmetic

Real Sums

Real Order

Integral Line

Fields

Lists

Rational Products

Rational Sums

Real Numbers

Rational Order

Geometry

Rational Numbers

Rings

Direct Products

Set Numbers

Integer Arithmetic

Natural Fractions

Finite Sets

Natural Multiplicative Identity

Natural Additive Identity

Integer Products

Inverse Elements

Equivalent Sets

Identity Elements

Natural Arithmetic

Family Unions and Intersections

Function Inverse

Element Functions

Natural Powers

Integer Sums

Integer Order

Comparisons

Families

Function Composition

Function Images

Operations

Natural Products

Integer Numbers

Orders

Functions

Equivalence Relations

Converse Relations

Natural Order

Natural Sums

Generalized Set Dualities

Relations

Recursion Theorem

Ordered Pair Projections

Peano Axioms

Natural Induction

Set Products

Set Dualities

Set Unions and Intersections

Set Partition

Intersection of Empty Set

Set Symmetric Differences

Successor Sets

Set Power

Unordered Triples

Natural Numbers

Pair Union

Ordered Pairs

Set Intersection

Set Complements

Pair Intersection

Set Difference

Set Union

Unordered Pairs

Empty Set

Set Specification

Set Equality

Set Inclusion

Deduction

Quantified Statements

Logical Statements

Statements

Identities

Sets

Names

Letters

Objects