Why

Does a signed-set decomposition exist for any signed measure?

Result

The answer is yes.

Prop. 1. *Let $(X, \mathcal{A})$ be a measurable space. Let $\mu : \mathcal{A} \to [-\infty, \infty]$ be a signed measure. There exists a signed-set decomposition of X under μ.*

Proof. TODO   □

Uniqueness

Signed Set Decomposition Existence

Signed Set Decomposition

Signed Measures

Measures

Sigma Algebras · Extended Real Numbers

Real Limits

Absolute Value

Interval Length

Intervals

Real Line

Real Order

Real Sequence

Real Numbers

Rational Numbers · Integral Line

Sequences

Integer Arithmetic

Direct Products · Set Numbers · Natural Additive Identity · Natural Multiplicative Identity

Finite Sets · Identity Elements · Arithmetic

Subset Algebras · Equivalent Sets · Natural Exponents · Integer Products

Set Operations · Family Unions and Intersections · Function Inverses · Natural Products · Integer Sums

Families · Function Composites · Function Images · Operations · Natural Sums · Integer Numbers

Functions · Natural Order · Recursion Theorem · Equivalence Relations

Cardinality · Relations · Peano Axioms

Subset Systems · Cartesian Products · Natural Induction

Ordered Pairs · Set Powers · Generalized Set Dualities · Natural Numbers

Set Symmetric Differences · Set Dualities · Unordered Triples · Successor Sets · Set Unions and Intersections · Intersection of Empty Set · Partitions

Set Complements · Pair Unions · Set Intersections

Set Unions · Set Difference · Pair Intersections

Unordered Pairs · Empty Set

Set Specification · Geometry

Set Inclusion

Standardized Accounts

Accounts

Deductions

Quantified Statements

Logical Statements

Statements

Identities · Sets

Names

Letters · Objects