Why

We want a complete norm on the space of finite signed measures.

Result

Prop. 1. *The total variation norm is complete.*

Proof. TODO $\qquad\square$

Total Variation Complete

Variation Measure

Measure

Sigma Algebras

Extended Real Numbers   Real Series

Real Limits

Absolute Value

Interval Length

Intervals

Real Line

Real Sequences   Real Order

Sequences   Rational Order   Real Numbers

Rational Numbers   Integral Line

Integer Arithmetic   Subset Algebra

Limits   Set Numbers   Cardinality   Natural Additive Identity   Natural Multiplicative Identity

Integer Products   Finite Sets   Arithmetic   Identity Elements

Direct Products   Natural Powers   Equivalent Sets   Operations

Family Unions and Intersections   Integer Sums   Integer Order   Natural Products   Function Inverses   Comparisons

Families   Integer Numbers   Natural Sums   Orders   Function Images   Function Composites

Recursion Theorem   Equivalence Relations   Natural Order   Functions   Converse Relations

Peano Axioms   Relations

Natural Induction   Set Products   Subset Systems

Generalized Set Dualities   Natural Numbers   Set Powers   Ordered Pairs

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

Pair Unions   Set Intersections   Set Complements

Pair Intersections   Set Differences   Set Unions

Empty Set   Unordered Pairs

Set Specification   Geometry

Set Inclusion

Standardized Accounts

Accounts

Deductions

Quantified Statements

Logical Statements

Statements

Identities   Sets

Names

Letters   Objects

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