Why

We name the image measures of real-valued random variables.

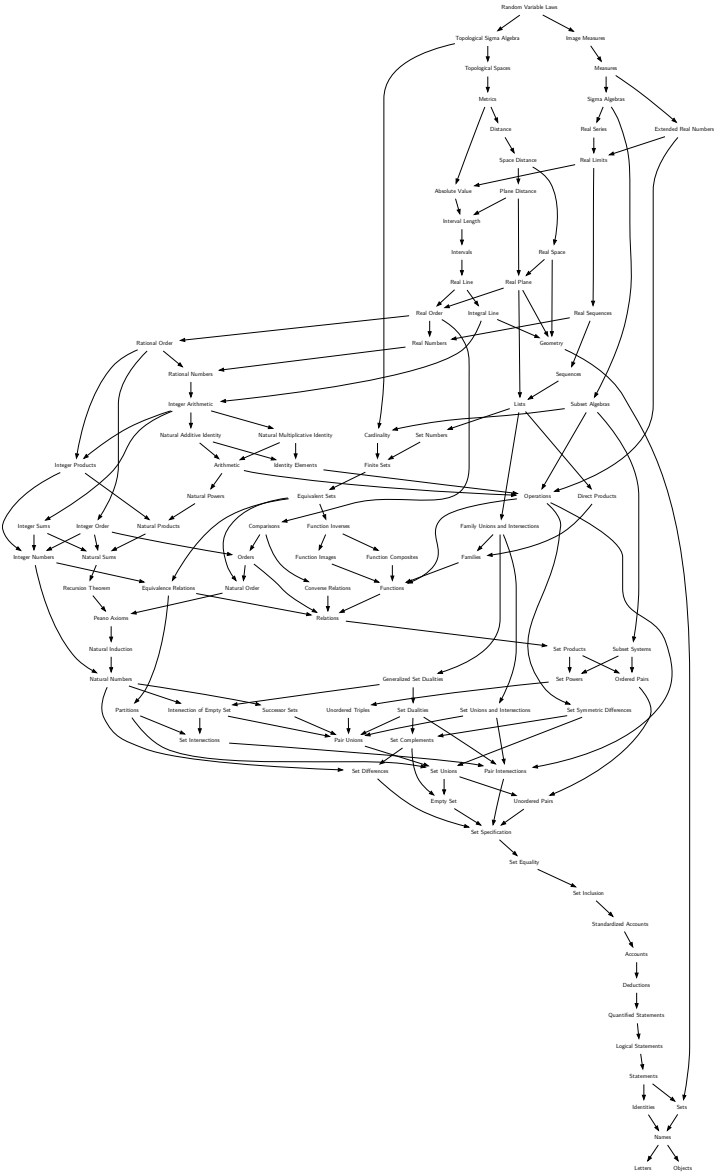
Definition

The *law* of a random variable is the image measure (see Image Measures) of the probability measure under the random variable.

For example, if the random variable is real-valued we use the topological sigma algebra of the real numbers and the law is the image measure on $\mathbf{R}$ induced by the probability measure.

Notation

Let $(X, \mathcal{A})$ and $(Y, \mathcal{B})$ be two measurable spaces. Let $f : X \to Y$ be a random variable. Let $\mu : \mathcal{A} \to [0, \infty]$ be a probability measure. We denote the law of f by μ_f.


Random Variable Laws
Topological Sigma Algebra
Image Measures
Topological Spaces
Measures
Metrics
Sigma Algebras
Distance
Real Series
Extended Real Numbers
Space Distance
Real Limits
Absolute Value
Plane Distance
Interval Length
Intervals
Real Space
Real Line
Real Plane
Real Order
Integral Line
Real Sequences
Rational Order
Real Numbers
Geometry
Rational Numbers
Sequences
Integer Arithmetic
Lists
Subset Algebras
Natural Additive Identity
Natural Multiplicative Identity
Cardinality
Set Numbers
Integer Products
Arithmetic
Identity Elements
Finite Sets
Natural Powers
Equivalent Sets
Operations
Direct Products
Integer Sums
Integer Order
Natural Products
Comparisons
Function Inverses
Family Unions and Intersections
Integer Numbers
Natural Sums
Orders
Function Images
Function Composites
Families
Recursion Theorem
Equivalence Relations
Natural Order
Convene Relations
Functions
Peano Axioms
Relations
Natural Induction
Set Products
Subset Systems
Natural Numbers
Generalized Set Dualities
Set Powers
Ordered Pairs
Partitions
Intersection of Empty Set
Successor Sets
Unordered Triples
Set Dualities
Set Unions and Intersections
Set Symmetric Differences
Pair Unions
Set Complements
Set Intersections
Pair Intersections
Set Differences
Set Unions
Empty Set
Unordered Pairs
Set Specification
Set Equality
Set Inclusion
Standardized Accounts
Accounts
Deductions
Quantified Statements
Logical Statements
Statements
Identities
Sets
Names
Letters
Objects