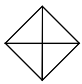


Why

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

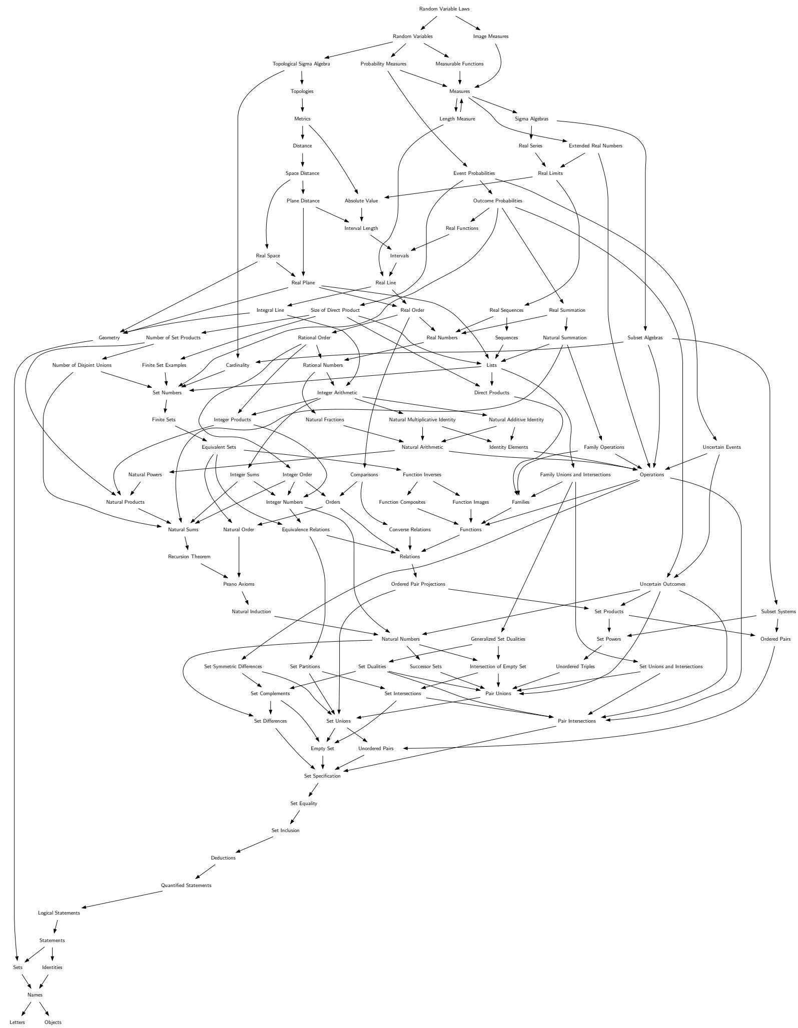
Definition

The *law* of a random variable is the image measureof the probability measureunder 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
Random Variables
Image Measures
Topological Sigma Algebra
Probability Measures
Measurable Functions
Topologies
Measures
Metrics
Length Measure
Sigma Algebras
Distance
Real Series
Extended Real Numbers
Space Distance
Event Probabilities
Real Limits
Plane Distance
Absolute Value
Outcome Probabilities
Interval Length
Real Functions
Real Space
Intervals
Real Plane
Real Line
Integral Line
Size of Direct Product
Real Order
Real Sequences
Real Summation
Geometry
Number of Set Products
Rational Order
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Number of Disjoint Unions
Finite Set Examples
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Direct Products
Finite Sets
Integer Products
Natural Fractions
Natural Multiplicative Identity
Natural Additive Identity
Equivalent Sets
Natural Arithmetic
Identity Elements
Family Operations
Uncertain Events
Natural Powers
Integer Sums
Integer Order
Comparisons
Function Inverses
Family Unions and Intersections
Operations
Natural Products
Integer Numbers
Orders
Function Composites
Function Images
Families
Natural Sums
Natural Order
Equivalence Relations
Converse Relations
Functions
Recursion Theorem
Relations
Peano Axioms
Ordered Pair Projections
Uncertain Outcomes
Natural Induction
Set Products
Subset Systems
Natural Numbers
Generalized Set Dualities
Set Powers
Ordered Pairs
Set Symmetric Differences
Set Partitions
Set Dualities
Successor Sets
Intersection of Empty Set
Unordered Triples
Set Unions and Intersections
Set Complements
Set Intersections
Pair Unions
Set Differences
Set Unions
Pair Intersections
Empty Set
Unordered Pairs
Set Specification
Set Equality
Set Inclusion
Deductions
Quantified Statements
Logical Statements
Statements
Sets
Identities
Names
Letters
Objects