Why

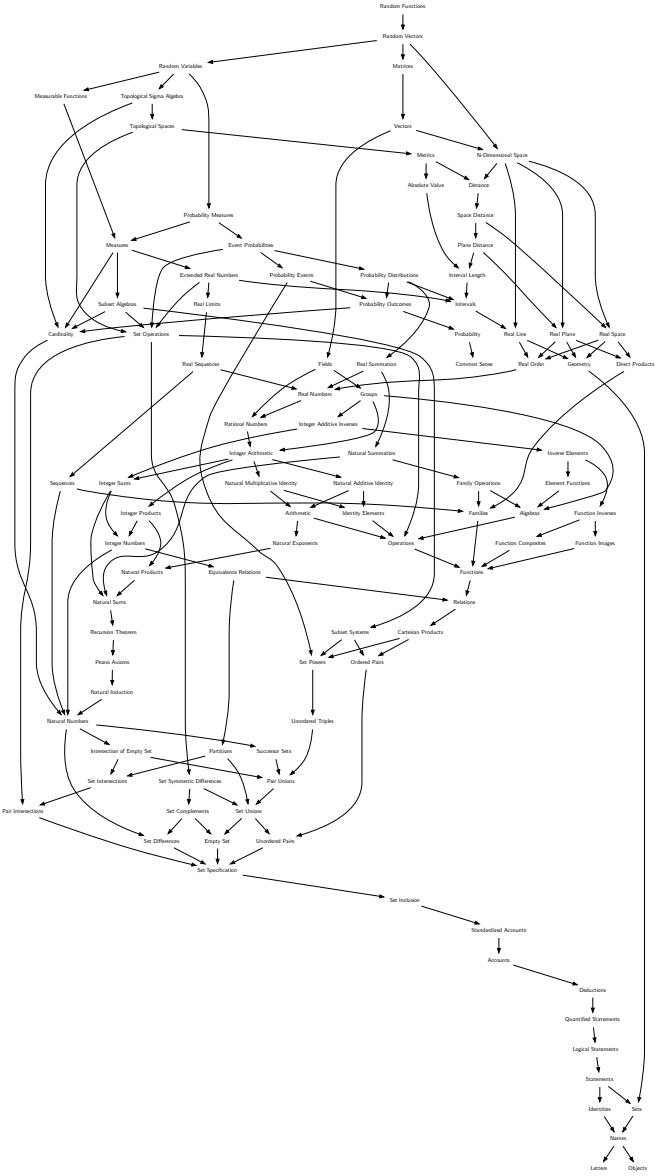
We can generalize random variables and random vectors.

Definition

Let $(\Omega, \mathcal{A}, \mathbf{P})$ a probability space and I an index set. A *random function* (or *random process*, or *stochastic process*[1]) on I is a family of random variables with a common codomain.

Let A be the codomain of the random variables. Then we say that the random functionj is on I and in A. We say that the random function is A-valued.

[1]The word "process" is often used when the index set is associated with time


Random Functions
Random Vectors
Random Variables
Matrices
Measurable Functions
Topological Sigma Algebra
Topological Spaces
Vectors
Metrics
N-Dimensional Space
Absolute Value
Distance
Space Distance
Plane Distance
Probability Measure
Measures
Event Probabilities
Extended Real Numbers
Probability Events
Probability Distributions
Interval Length
Intervals
Subset Algebras
Real Limits
Probability Outcomes
Cardinality
Set Operations
Probability
Real Line
Real Plane
Real Space
Common Sense
Real Order
Geometry
Direct Products
Real Sequences
Fields
Real Summation
Real Numbers
Groups
Rational Numbers
Integer Additive Inverses
Integer Arithmetic
Natural Summation
Inverse Elements
Sequences
Integer Sums
Natural Multiplicative Identity
Natural Additive Identity
Family Operations
Element Functions
Integer Products
Arithmetic
Identity Elements
Families
Algebras
Function Inverses
Integer Numbers
Natural Exponents
Operations
Function Composites
Function Images
Natural Products
Equivalence Relations
Functions
Natural Sums
Relations
Recursion Theorem
Subset Systems
Cartesian Products
Peano Axioms
Set Powers
Ordered Pairs
Natural Induction
Natural Numbers
Unordered Triples
Intersection of Empty Set
Partitions
Successor Sets
Set Intersections
Set Symmetric Difference
Pair Unions
Pair Intersections
Set Complements
Set Unions
Set Differences
Empty Set
Unordered Pairs
Set Specification
Set Inclusion
Standardized Accounts
Accounts
Deductions
Quantified Statements
Logical Statements
Statements
Identities
Sets
Names
Letters
Objects