Why

1

Definition

A *probabilistic model* (or *statistical model*) is a family of probability measures. We call the index set the *parameter set* or *set of parameters*.

Notation

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[1]Will be included in future editions.

Probabilistic Models

Probability Measures

Measures — Event Probabilities

Sigma Algebras

Real Series — Extended Real Numbers

Real Limits

Absolute Value

Interval Length — Probability Distributions

Intervals

Real Line

Real Sequences — Real Order — Real Summation

Sequences — Rational Order — Real Numbers

Integral Line — Rational Numbers

Lists — Subset Algebras — Integer Arithmetic

Set Number — Cardinality — Natural Summation — Natural Additive Identity — Natural Multiplicative Identity

Finite Sets — Integer Products — Family Operations — Arithmetic — Identity Elements

Direct Products — Equivalent Sets — Natural Powers — Operations

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

Function Images — Function Composites — Families — Integer Numbers — Natural Sums

Functions — Converse Relations — Equivalence Relations — Natural Order — Recursion Theorem

Orders — Relations — Peano Axioms

Natural Induction

Subset Systems — Set Products — Uncertain Outcomes

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

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

Pair Unions — Set Intersections — Set Complements

Set Unions — Pair Intersections — Set Differences

Unordered Pairs — Empty Set

Geometry — Set Specification

Set Inclusion

Standardized Accounts

Accounts

Deductions

Quantified Statements

Logical Statements

Statements — Identities

Sets

Names

Letters — Objects

4