Convergence In Probability

Why

laws of large numbers

Definition

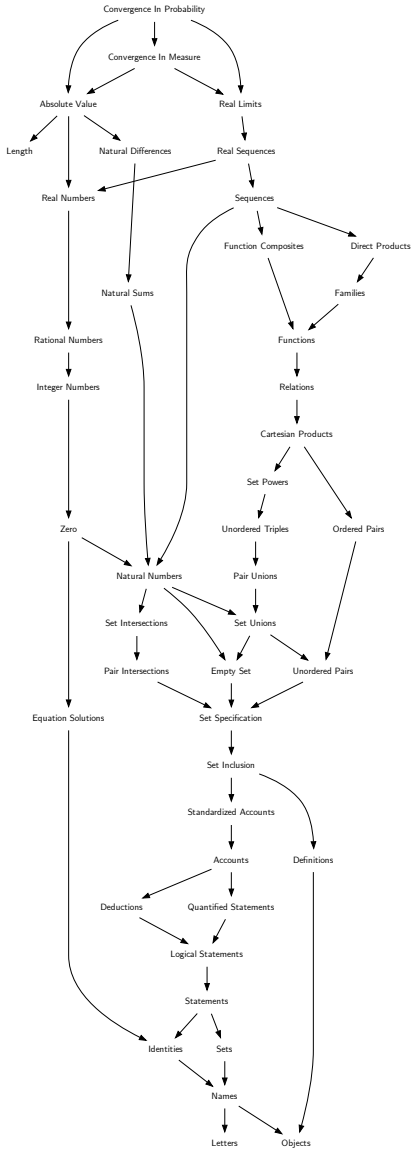
A sequence of random variables convergences in probability if it converges in measure.

Notation

Let $(X, \mathcal{A}, \mu)$ be a measure space. Let $(f_n)_n$ a sequence of real-valued measurable functions on X. Let $f : X \to R$ be measurable function. If f_n converges in measure to f we write: $f_n \longrightarrow f$ in probability, read aloud as "f n goes to f in probability."

Suppose $f_n \longrightarrow f$ in probability. Then for every $\varepsilon > 0$,

$$\lim_{n\to\infty} \mu(\{x \in X \mid |f_n(x) - f(x)| > \varepsilon\}) = 0.$$


Convergence In Probability
Convergence In Measure
Absolute Value
Real Limits
Length
Natural Differences
Real Sequences
Real Numbers
Sequences
Function Composites
Direct Products
Natural Sums
Families
Rational Numbers
Functions
Integer Numbers
Relations
Cartesian Products
Set Powers
Zero
Unordered Triples
Ordered Pairs
Natural Numbers
Pair Unions
Set Intersections
Set Unions
Pair Intersections
Empty Set
Unordered Pairs
Equation Solutions
Set Specification
Set Inclusion
Standardized Accounts
Accounts
Definitions
Deductions
Quantified Statements
Logical Statements
Statements
Identities
Sets
Names
Letters
Objects