Why

If two random variables have the same cumulative distribution functions, will they have the same law? And the converse? NEED: probability space construction from cumulative distribution function.

Result

PROPOSITION **1.** *The cumulative distribution functions of two random variables are equal if and only if their laws are equal.*

Proof. □

Cumulative Distribution Function and Law

Cumulative Distribution Functions

Random Variables

Topological Sigma Algebra · Measurable Functions

Topological Spaces

Metrics

Distance

Space Distance · Probability Measure · Measures

Event Probabilities · Plane Distance

Probability Events · Probability Distributions · Interval Length · Extended Real Numbers · Subset Algebras

Real Space · Probability Outcomes · Intervals · Real Limits · Set Operations · Cardinality

Probability · Real Summation · Real Order · Real Sequences

Direct Products · Common Sense

Real Numbers

Geometry

Rational Numbers

Natural Summation · Integer Arithmetic

Family Operations · Natural Multiplicative Identity · Natural Additive Identity · Sequences

Families · Algebra · Identity Elements · Arithmetic

Operations · Natural Exponents · Integer Products

Functions · Integer Sums · Natural Products

Integer Numbers · Natural Sums

Equivalence Relations · Recursion Theorem

Peano Axioms

Relations · Natural Induction

Subset Systems · Cartesian Products · Set Powers

Ordered Pairs · Natural Numbers

Unordered Triples · Partitions · Successor Sets · Intersection of Empty Set

Pair Unions · Set Symmetric Differences · Set Intersections

Set Unions · Set Complements · Pair Intersections

Unordered Pair · Empty Set · Set Differences

Set Specification

Set Inclusion

Standardized Accounts

Accounts · Definitions

Quantified Statements · Deductions

Logical Statements

Statements

Sets · Identities

Names

Letters · Objects