Why

TODO

Results

Let n be a natural number. If the integral of the nth power of a real-valued random variable exists, the *nth moment* of the random variable is the expectation of its nth power.

Notation

Let n be a natural number. Let $(X, \mathcal{A}, \mu)$ be a probability space. Let f be a real-valued random variable on X such that $\int f^n d\mu$ exists. In expectation notation, the nth moment of f is $\mathsf{E}(f^n)$.

Random Variable Moments

Expectation

Random Variables

Measurable Functions   Probability Measures

Measures

Event Probabilities   Extended Real Numbers   Topological Sigma Algebra

Real Limits   Probability Distributions   Topological Spaces

Probability Events   Real Sequences   Real Summation   Intervals   Metrics

Sequences   Subset Algebras   Probability Outcomes   Natural Summation   Real Numbers   Distance

Family Operations   Direct Products   Cardinality   Probability   Rational Numbers   Set Operations   Length Common Notions

Natural Families   Injective Functions   Algebras   Natural Order   Common Sense   Integer Numbers

Subset Systems   Function Composites   Families   Operations   Natural Sums   Zero

Power Set   Functions   Natural Numbers   Set Symmetric Differences   Equation Solutions

Relations   Set Intersections   Set Unions

Ordered Pairs   Set Complements

Empty Set   Unordered Pairs

Set Specification   Equations

Set Inclusion

Set Equality   Sentences

Standardized Accounts   Sets   Identity

Accounts

Quantified Statements   Deductions

Logical Statements

Statements

Objects

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