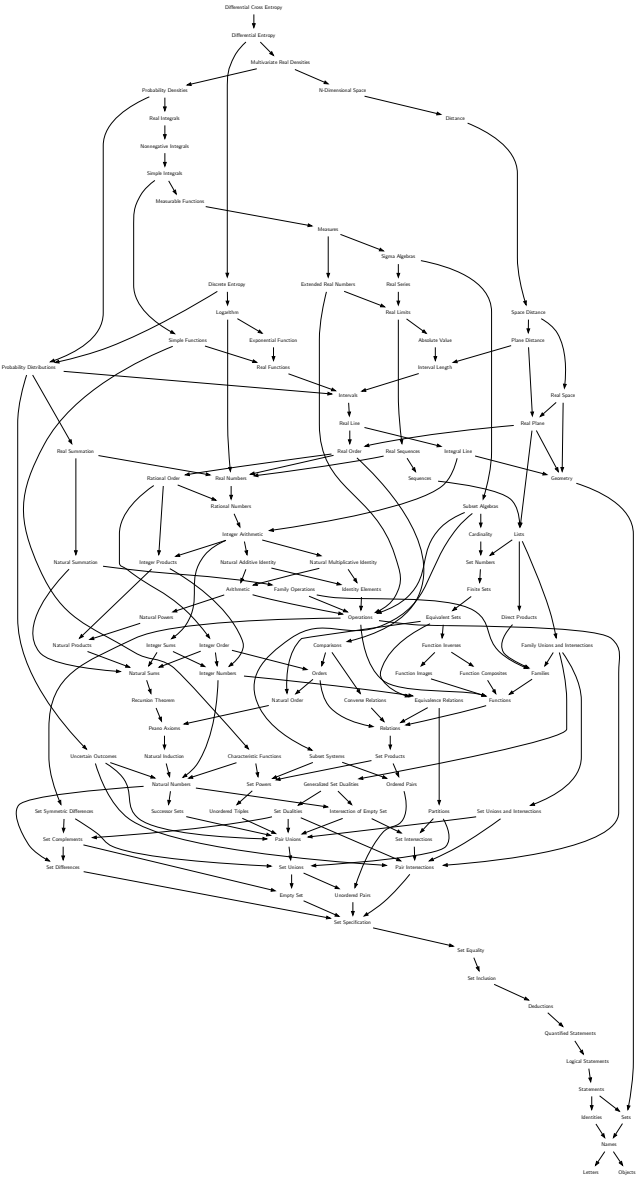
## Definition

The *differential cross entropy* of a second density with respect to a a first density is the integral of the second density against the negative log of the first density. Let $R$ denote the set of real numbers. Let $f : R^n \to R$ and $g : R^n \to R$ be probability density functions. The differential cross entropy of $f$ relative to g

$$-\int g \log f$$

We denote the differential cross entropy of $f$ relative to g by $h(g, f)$.


Differential Cross Entropy
Differential Entropy
Multivariate Real Densities
Probability Densities
N-Dimensional Space
Distance
Real Integrals
Nonnegative Integrals
Simple Integrals
Measurable Functions
Measures
Sigma Algebras
Discrete Entropy
Extended Real Numbers
Real Series
Space Distance
Logarithm
Real Limits
Simple Functions
Exponential Function
Absolute Value
Plane Distance
Probability Distributions
Real Functions
Interval Length
Intervals
Real Space
Real Line
Real Plane
Real Summation
Real Order
Real Sequences
Integral Line
Rational Order
Real Numbers
Sequences
Geometry
Rational Numbers
Subset Algebras
Integer Arithmetic
Cardinality
Lists
Natural Summation
Integer Products
Natural Additive Identity
Natural Multiplicative Identity
Set Numbers
Arithmetic
Family Operations
Identity Elements
Finite Sets
Natural Powers
Operations
Equivalent Sets
Direct Products
Natural Products
Integer Sums
Integer Order
Comparisons
Function Inverses
Family Unions and Intersections
Orders
Function Images
Function Composites
Families
Natural Sums
Integer Numbers
Recursion Theorem
Natural Order
Converse Relations
Equivalence Relations
Functions
Peano Axioms
Relations
Uncertain Outcomes
Natural Induction
Characteristic Functions
Subset Systems
Set Products
Natural Numbers
Set Powers
Generalized Set Dualities
Ordered Pairs
Set Symmetric Differences
Successor Sets
Unordered Triples
Set Dualities
Intersection of Empty Set
Partitions
Set Unions and Intersections
Set Complements
Pair Unions
Set Intersections
Set Differences
Set Unions
Pair Intersections
Empty Set
Unordered Pairs
Set Specification
Set Equality
Set Inclusion
Deductions
Quantified Statements
Logical Statements
Statements
Identities
Sets
Names
Lemmas
Objects