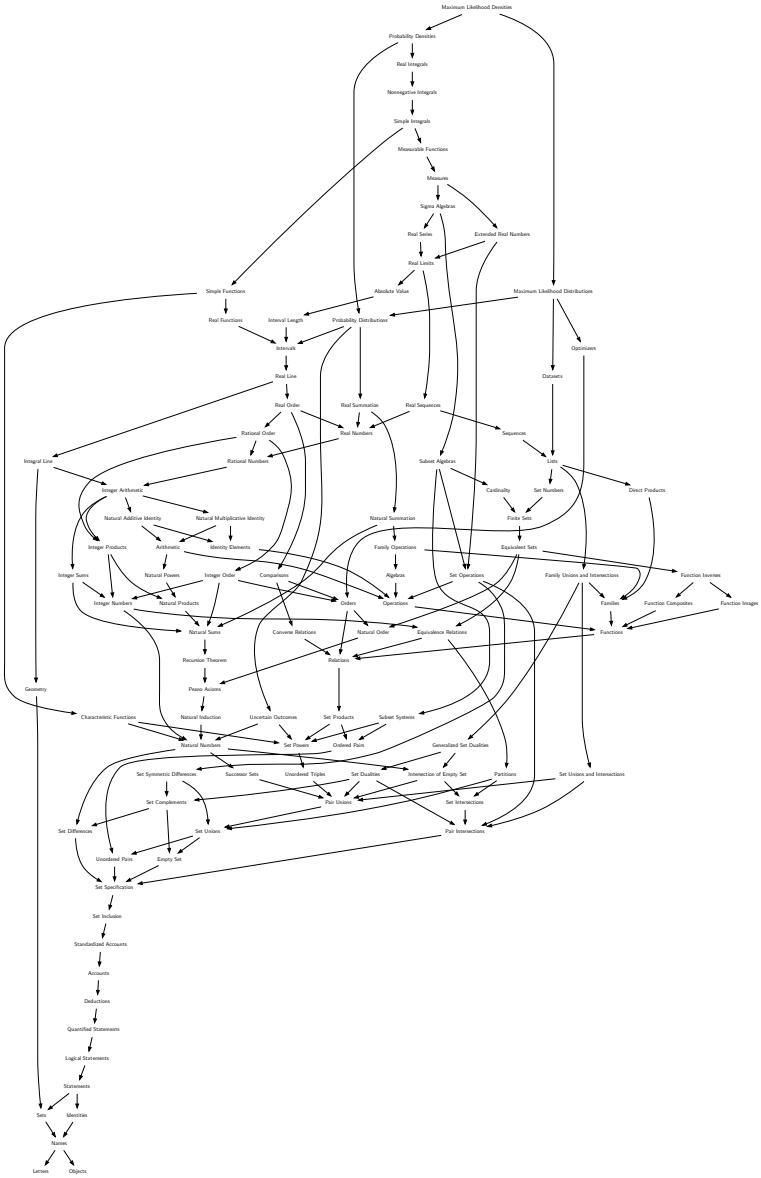
Why

We want to summarize a dataset in $\mathbf{R}$ with a density

Definition

The *likelihood* (or *density likelihood*) of a density $f : \mathbf{R} \to \mathbf{R}$ on a datset $x^1, \ldots, x^n \in \mathbf{R}$ is $\prod_{k=1}^{n} f(x^k)$ A *maximum likelihood density* is a density which maximizes the likelihood among all densities.

As with probability distributions, we say that we are selecting the distribution according to the *maximum likelihood principle*. In general, we call any function from datasets to densities a *distribution selector*.


Maximum Likelihood Densities
Probability Densities
Real Integrals
Nonnegative Integrals
Simple Integrals
Measurable Functions
Measures
Sigma Algebras
Real Series
Extended Real Numbers
Real Limits
Simple Functions
Absolute Value
Maximum Likelihood Distributions
Real Functions
Interval Length
Probability Distributions
Intervals
Optimizers
Real Line
Datasets
Real Order
Real Summation
Real Sequences
Rational Order
Real Numbers
Sequences
Integral Line
Rational Numbers
Subset Algebras
Lists
Integer Arithmetic
Cardinality
Set Numbers
Direct Products
Natural Additive Identity
Natural Multiplicative Identity
Natural Summation
Finite Sets
Integer Products
Arithmetic
Identity Elements
Equivalent Sets
Family Operations
Integer Sums
Natural Powers
Integer Order
Comparisons
Algebras
Set Operations
Family Unions and Intersections
Function Inverses
Integer Numbers
Natural Products
Orders
Operations
Families
Function Composites
Function Images
Natural Sums
Converse Relations
Natural Order
Equivalence Relations
Functions
Recursion Theorem
Relations
Geometry
Peano Axioms
Characteristic Functions
Natural Induction
Uncertain Outcomes
Set Products
Subset Systems
Natural Numbers
Set Powers
Ordered Pairs
Generalized Set Dualities
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
Unordered Pairs
Empty Set
Set Specification
Set Inclusion
Standardized Accounts
Accounts
Deductions
Quantified Statements
Logical Statements
Statements
Sets
Identities
Names
Letters
Objects