Why

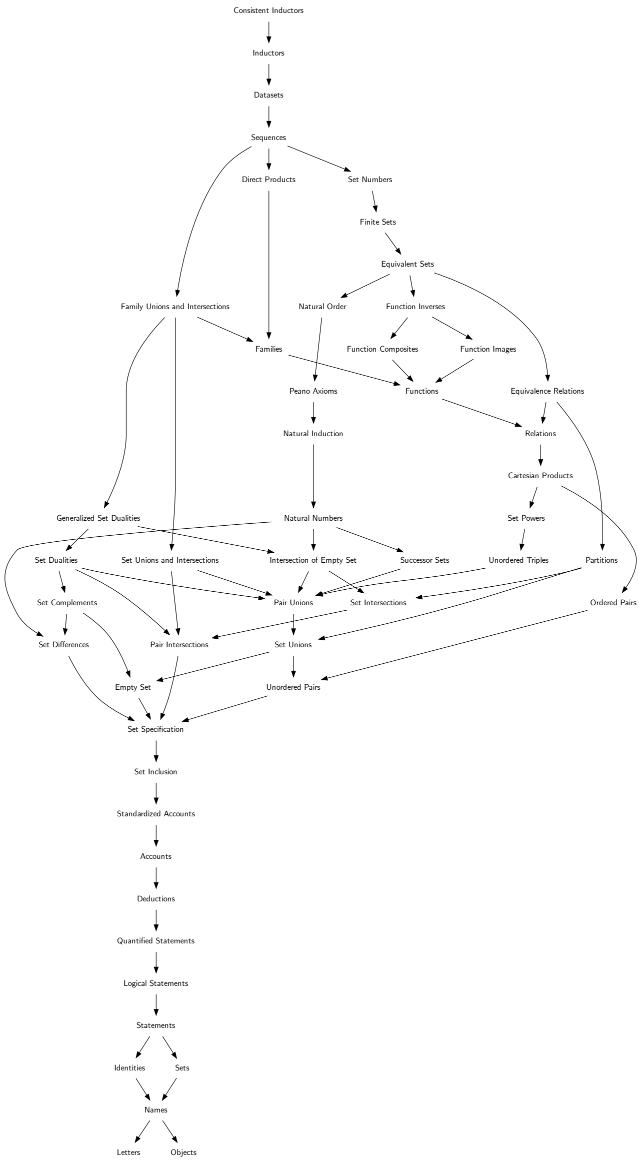
We discuss inductors that produce relations consistent with their given datasets.

Definition

Let $(x_1, y_1), \dots, (x_n, y_n)$ be a dataset in $X \times Y$. Let $\mathcal{R}$ be the set of all relations on $X \times Y$.

A *consistent inductor* $\{G_n : (X \times Y)^n \to \mathcal{R}\}_n$ is one for which, for all $n \in \mathbf{N}$, for all $D_n \in (X \times Y)^n$, D is consistent with $G_n(D_n)$. In other words, a consistent inductor always produces a relation with which the dataset is consistent.

The interpretation follows. Fix a relation $R^\star$. And let every dataset "shown" to the algorithm G_n be constructed by selecting elements from $R^\star$. In other words, every dataset is a sequence in $R^\star$. In this case, a dataset $D_n \in (X \times Y)^n$ is always consistent with $R^\star$ and so a consistent inductor will never "eliminate" $R^\star$. In other words, the inductor, in order to be consistent "must eliminate" every inconsistent relation. The thinking goes, if the dataset is "large and diverse", we may have seen many of the elements in $R^\star$, and have eliminated many smaller relations in $\mathcal{R}$ which did not include records in the dataset.



Consistent Inductors
Inductors
Datasets
Sequences
Direct Products
Set Numbers
Finite Sets
Equivalent Sets
Family Unions and Intersections
Natural Order
Function Inverses
Families
Function Composites
Function Images
Peano Axioms
Functions
Equivalence Relations
Natural Induction
Relations
Cartesian Products
Generalized Set Dualities
Natural Numbers
Set Powers
Set Dualities
Set Unions and Intersections
Intersection of Empty Set
Successor Sets
Unordered Triples
Partitions
Set Complements
Pair Unions
Set Intersections
Ordered Pairs
Set Differences
Pair Intersections
Set Unions
Empty Set
Unordered Pairs
Set Specification
Set Inclusion
Standardized Accounts
Accounts
Deductions
Quantified Statements
Logical Statements
Statements
Identities
Sets
Names
Letters
Objects