Why

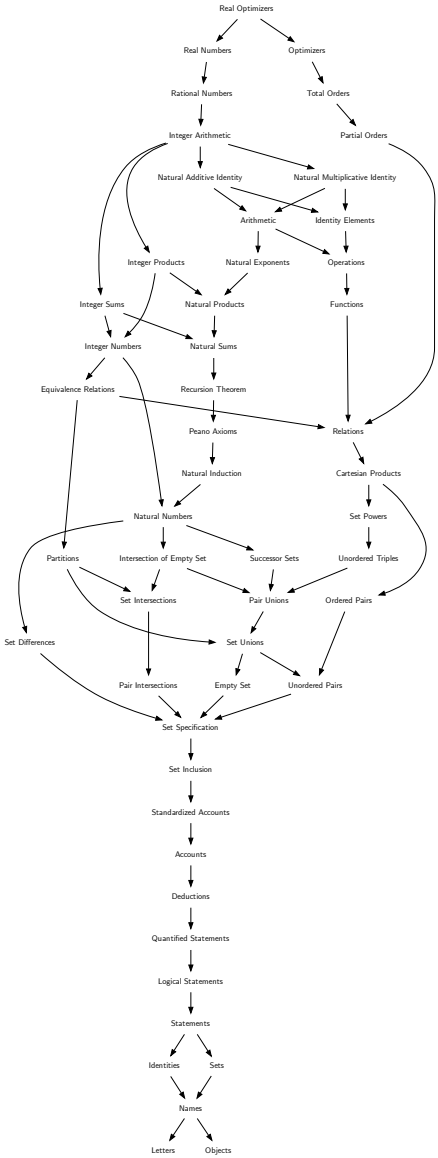
Often the chain considered in optimization is the real numbers.

Definition

A function from a non-empty set to the real numbers, in the context of optimizers, is called an *objective function* for the *feasible set* (its domain). Suppose the feasible set is a subset of real numbers. Often we can specify a function defined for every real number. The *objective function* is the restriction of this function to those elements which are *feasible*.

Notation

Let D be a non-empty set, a mnemonic for "domain." Let $f : D \to \mathbf{R}$. Often we have $g : A \to \mathbf{R}$, where $D \subset A$. So f is the restriction of g to the feasible set D. In this case the language feasible set language is especially useful, as an correspond to a mimimal element of $g(A)$, a larger set than $g(D)$. In this case, it is useful to speak of feasible elements.


Real Optimizers
Real Numbers
Optimizers
Rational Numbers
Total Orders
Integer Arithmetic
Partial Orders
Natural Additive Identity
Natural Multiplicative Identity
Arithmetic
Identity Elements
Integer Products
Natural Exponents
Operations
Integer Sums
Natural Products
Functions
Integer Numbers
Natural Sums
Equivalence Relations
Recursion Theorem
Peano Axioms
Relations
Natural Induction
Cartesian Products
Natural Numbers
Set Powers
Partitions
Intersection of Empty Set
Successor Sets
Unordered Triples
Set Intersections
Pair Unions
Ordered Pairs
Set Differences
Set Unions
Pair Intersections
Empty Set
Unordered Pairs
Set Specification
Set Inclusion
Standardized Accounts
Accounts
Deductions
Quantified Statements
Logical Statements
Statements
Identities
Sets
Names
Letters
Objects