Why

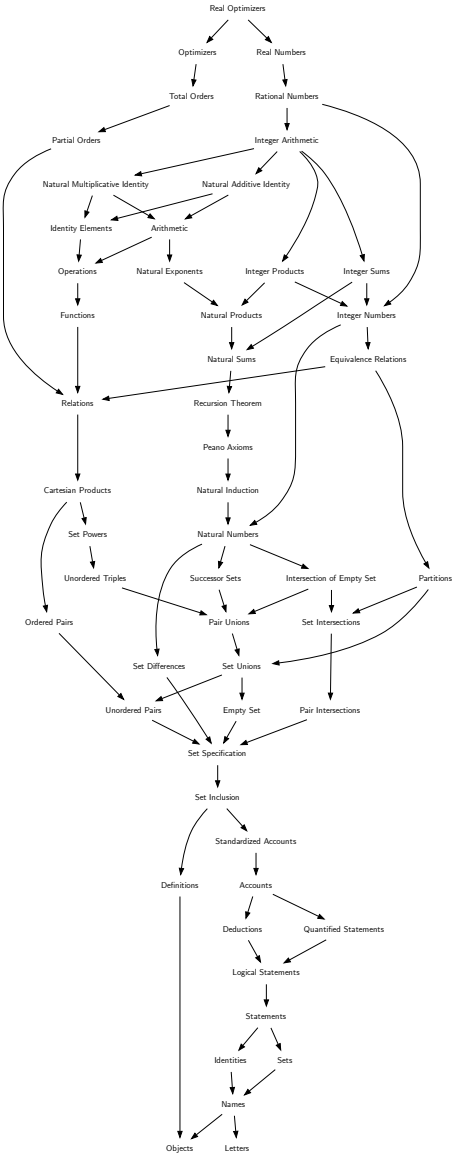
Often the chain considered in optimization is the real numbers.

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