Why

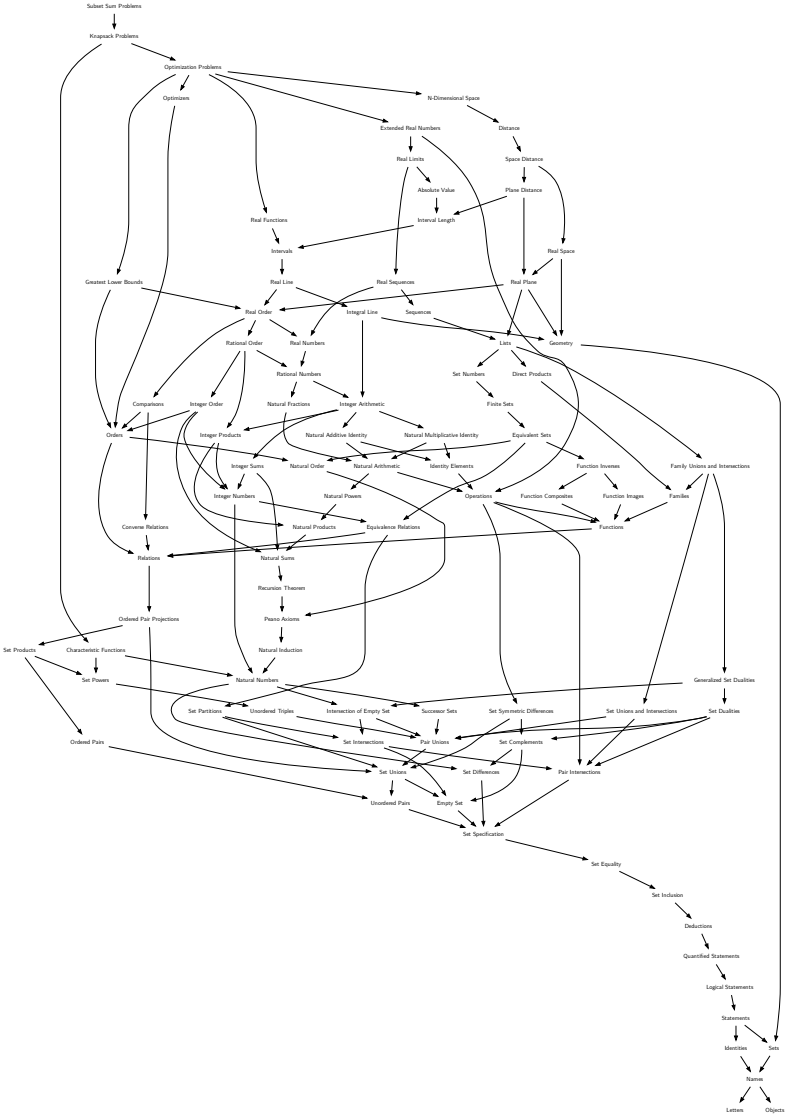
We consider the case in which the profit and weight function of teh knapsack problem are identical.

Definition

Suppose (p, w, c) is knapsack problem data and $w = p$. Then we are interested in finding $x \in 0, 1^n$ to

$$\begin{array}{rl} \text{maximize} & \sum_{i=1}^{n} q(i)\chi_H(i) \\ \text{subject to} & \sum_{i=1}^{n} w_i\chi_H(i) \leq cx_i \in \{0,1\}^n \quad i = 1, \ldots, n \end{array}$$

This special case of the knapsack problem is often called the *subset sum problem*.


Subset Sum Problems
Knapsack Problems
Optimization Problems
Optimizers
N-Dimensional Space
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Distance
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Space Distance
Absolute Value
Plane Distance
Interval Length
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Greatest Lower Bounds
Real Line
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Direct Products
Comparisons
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Finite Sets
Orders
Integer Products
Natural Additive Identity
Natural Multiplicative Identity
Equivalent Sets
Function Inverses
Family Unions and Intersections
Integer Sums
Natural Order
Natural Arithmetic
Identity Elements
Integer Numbers
Natural Powers
Operations
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Recursion Theorem
Ordered Pair Projections
Peano Axioms
Set Products
Characteristic Functions
Natural Induction
Set Powers
Natural Numbers
Generalized Set Dualities
Set Partitions
Unordered Triples
Intersection of Empty Set
Successor Sets
Set Symmetric Differences
Set Unions and Intersections
Set Dualities
Ordered Pairs
Set Intersections
Pair Unions
Set Complements
Set Unions
Set Differences
Pair Intersections
Unordered Pairs
Empty Set
Set Specification
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Deductions
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Statements
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