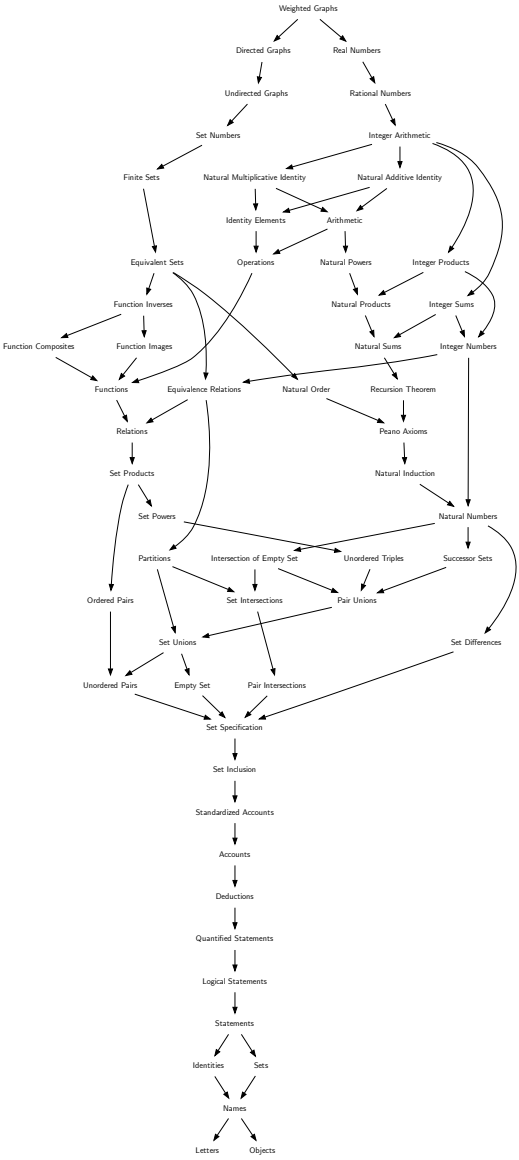
Why

Often the edges of some graph are associated with a particular cost, perhaps the cost of traversing that edge.

Definition

Let (V, E) be an undirected graph. An *unordered weight function* $w : E \to \mathbf{R}$ is a function mapping undirected edges to real numbers. A *weighted undirected graph* is an ordered pair $((V, E), w)$ where (V, E) is an undirected graph and w is an unordered wieght function.

Let (V, F) be a directed graph. An *ordered weight function* or just *weight function* $\omega : F \to \mathbf{R}$ is a function mapping directed edges to real numbers. A *weighted directed graph* is an ordered pair $((V, F), \omega)$ where (V, E) is an undirected graph and ω is an ordered wieght function.


Weighted Graphs
Directed Graphs
Real Numbers
Undirected Graphs
Rational Numbers
Set Numbers
Integer Arithmetic
Finite Sets
Natural Multiplicative Identity
Natural Additive Identity
Identity Elements
Arithmetic
Equivalent Sets
Operations
Natural Powers
Integer Products
Function Inverses
Natural Products
Integer Sums
Function Composites
Function Images
Natural Sums
Integer Numbers
Functions
Equivalence Relations
Natural Order
Recursion Theorem
Relations
Peano Axioms
Set Products
Natural Induction
Set Powers
Natural Numbers
Partitions
Intersection of Empty Set
Unordered Triples
Successor Sets
Ordered Pairs
Set Intersections
Pair Unions
Set Unions
Set Differences
Unordered Pairs
Empty Set
Pair Intersections
Set Specification
Set Inclusion
Standardized Accounts
Accounts
Deductions
Quantified Statements
Logical Statements
Statements
Identities
Sets
Names
Letters
Objects