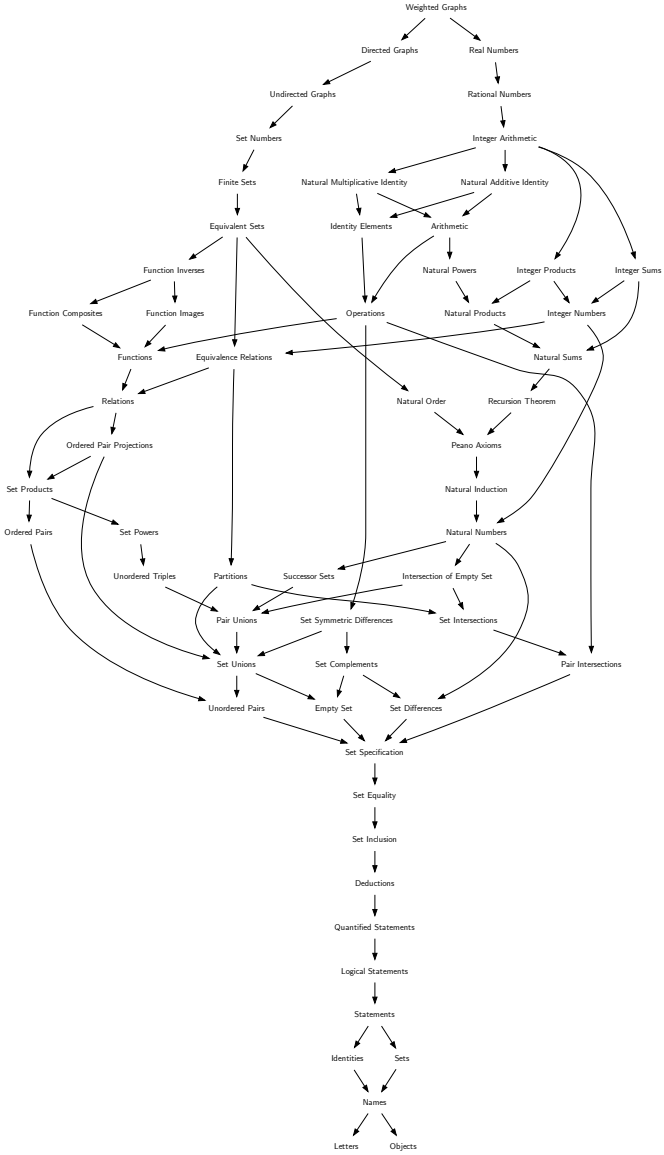
Why

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
Equivalent Sets
Identity Elements
Arithmetic
Function Inverses
Natural Powers
Integer Products
Integer Sums
Function Composites
Function Images
Operations
Natural Products
Integer Numbers
Functions
Equivalence Relations
Natural Sums
Relations
Natural Order
Recursion Theorem
Ordered Pair Projections
Peano Axioms
Set Products
Natural Induction
Ordered Pairs
Set Powers
Natural Numbers
Unordered Triples
Partitions
Successor Sets
Intersection of Empty Set
Pair Unions
Set Symmetric Differences
Set Intersections
Set Unions
Set Complements
Pair Intersections
Unordered Pairs
Empty Set
Set Differences
Set Specification
Set Equality
Set Inclusion
Deductions
Quantified Statements
Logical Statements
Statements
Identities
Sets
Names
Letters
Objects