1.6 Kinds of continuity

A research result based on this book but not fully included in this book (and not yet published) is that the following kinds of continuity are described by the same algebraic (or rather categorical) formulas for different kinds of continuity and have common properties:

- discrete continuity (between digraphs);
- (pre)topological continuity;
- proximal continuity;
- uniform continuity;
- Cauchy continuity;
- (probably other kinds of continuity).

Thus my research justifies using the same word "continuity" for these diverse kinds of continuity.

See http://www.mathematics21.org/algebraic-general-topology.html

1.7 Structure of this book

In the chapter 2 "Common knowledge, part 1" some well known definitions and theories are considered. You may skip its reading if you already know it. That chapter contains info about:

- posets;
- lattices and complete lattices;
- Galois connections;
- co-brouwerian lattices;
- a very short intro into category theory (It is *very* basic, I even don't define *functors* as they have no use in my theory);
- a very short introduction to group theory.

Afterward there are my little additions to poset/lattice and category theory.

Afterward there is the theory of filters and filtrators.

Then there is "Common knowledge, part 2 (topology)", which considers briefly:

- metric spaces;
- topological spaces;
- pretopological spaces;
- proximity spaces.

Despite of the name "Common knowledge" this second common knowledge chapter is recommended to be read completely even if you know topology well, because it contains some rare theorems not known to most mathematicians and hard to find in literature.

Then the most interesting thing in this book, the theory of funcoids, starts.

Afterwards there is the theory of reloids.

Then I show relationships between funcoids and reloids.

The last I research generalizations of funcoids, *pointfree funcoids*, *staroids* and *multifuncoids* and some different kinds of products of morphisms.

1.8 Basic notation

1.8.1 Grothendieck universes

We will work in ZFC with an infinite and uncountable Grothendieck universe.