

Section 1: set equality as defined by elements is treated as an AXIOM, whereas behaviors of inclusion and belonging are considered definitions.

Section 1: “is $A \in A$ ever true? It is certainly not true of any reasonable set that anyone has ever seen.”

Section 2: Some context free grammar? Generating sentences from and/or/not/if-then etc.

Okay this seems to be meaningless and tautological because we are only able to create sets from sets that already exist, and we still haven’t talked about what sets are allowed to exist.

Section 3:

Section 4: Note that we did not even require the axiom of unions to create intersections. Also we did some really stupid shit with defining intersections and now we can’t take the intersection of an empty family because we rely on the set being nonempty to make statements. If we had been even remotely intelligent about this we would have taken any element in the union of the family and we would have been able to yield $\bigcap \emptyset = \emptyset$ but apparently good design is not desireable. //angry

Section 5: note that in taking products we had to make up sets that were disjoint, otherwise we run into problems when trying to express tuples like $\{1, 1, 2, 1\}$ ($\{\{1\}, \{2\}\}$)