

Terms from Rich Appendix A - Mathematical review

I won't claim that I did not miss any, but you might find this list helpful

Propositional logic

- wff (well-formed formula)
- variable (propositional symbol)
- truth table
- tautology (valid wff)
- satisfiable wff
- unsatisfiable wff
- equivalent wffs
- logically implies (entails)
- axiom
- theorem
- proof
- soundness
- completeness
- Modus ponens
- modus tollens
- contradiction

first-order logic (FOL, predicate calculus)

- variable
- term
- predicate
- free variable
- bound variable
- quantifier (\forall, \exists)
- sentence (wff with no free variables)
- ground instance (sentence with no variables)
- interpretation
- model
- valid, satisfiable, unsatisfiable
- logically implies (entails)
- theory
- soundness

completeness
logically complete
consistent

sets

characteristic function
enumeration
defision function
cardinality
countably infinite
subset
proper subset
Venn diagram
empty set
union, intersection, difference, complement
disjoint
partition

relations

ordered pair
Cartesian product
binary relation
n-ary relation
inverse
composition
Representations: explicit list, procedural (enumeration, characteristic function), adjacency matrix, graph
reflexive, symmetric, antisymmetric, transitive, equivalence relation
partial order
subsumption
maximal, minimal, least, greatest, elements
total order
well-founded, well-ordered

functions

domain
range (codomain)
argument

image

prefix, infix, postfix notation

composition

total function

partial function

one-to-one

onto

bijection

homeomorphism

isomorphism

binary functions

commutative,

associative

idempotent

distributive

absorption

identity (left identity, right identity)

self-inverse function

closure

transitive closure

proofs

construction

contradiction

counterexample

case enumeration

induction

pigeonhole principle

diagonalization

programs

loop invariant