

Theory of Computation (Version 2)

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Contents

1	Mathematical Preliminaries	1
1.1	Set Theory	1
1.2	Functions	1
1.3	Relations	1
1.4	Induction	1
1.5	Asymptotics	1
1.6	Combinatorics	1
1.7	Countability	1
1.8	Graph Theory	1
2	Autonoma Theory	2
2.1	Regular Expressions	2
2.2	Finite State Automata	2
2.3	Pumpng Lemma	2
2.4	Closure Propertoos	2
2.5	Myhill-Nerode and DFA Minimization	2
3	Group Theory	2
3.1	Brzozowski Algebraic Method	2
3.2	Dihedral Groups	2
3.3	Symmetry Groups	2
4	Turing Machines and Decidability	2
4.1	Standard Deterministic Turing Machine	2
4.2	Undecidability	2
4.3	Reducibility	3
5	Complexity Theory	3
5.1	P and NP	3
5.2	NP-Completeness	3

1 Mathematical Preliminaries

1.1 Set Theory

TODO

1.2 Functions

TODO

1.3 Relations

TODO

1.4 Induction

TODO

1.5 Asymptotics

1.6 Combinatorics

TODO

1.7 Countability

TODO

1.8 Graph Theory

TODO

2 Automata Theory

2.1 Regular Expressions

TODO

2.2 Finite State Automata

TODO

2.3 Pumping Lemma

TODO

2.4 Closure Properties

TODO

2.5 Myhill-Nerode and DFA Minimization

TODO

3 Group Theory

TODO

3.1 Brzozowski Algebraic Method

TODO

3.2 Dihedral Groups

TODO

3.3 Symmetry Groups

TODO

4 Turing Machines and Decidability

4.1 Standard Deterministic Turing Machine

TODO

4.2 Undecidability

TODO

4.3 Reducibility

TODO

5 Complexity Theory

5.1 P and NP

TODO

5.2 NP-Completeness

TODO