

MTH 714 Logic and Computability

Course Outline and Recommended Homework Problems (from the textbook)

1. Introduction

- 1.1: read only
- 1.2: read only
- 1.3: read only
- 1.4: read only

2. Propositional Calculus: Formulas, Models, Tableaux

- 2.1: read only
- 2.2: 1, 2
- 2.3: 3
- 2.4: 4, 5, 6, 7
- 2.5: 8, 11
- 2.6: 12, 13
- 2.7: 14
- 2.8: 15, 16

3. Propositional Calculus: Deductive Systems

- 3.1: read only
- 3.2: 1, 2, 3
- 3.3: 4, 5, 6, 7, 9
- 3.4: 10, 11, 12 (hard), 15
- 3.5: 16

4. Propositional Calculus: Resolution

- 4.1: 1-6, 8, 9

5. Predicate Calculus: Formulas, Models, Tableaux

- 5.1: read only
- 5.2: read only
- 5.3, 5.4: 1-4
- 5.5: 6, 7
- 5.6: 9
- 5.7: read only
- 5.8: read only

6. Predicate Calculus: Deductive Systems

- 6.1: 1-4
- 6.2: 5-8
- 6.3: 9
- 6.4: 10 (hard)

7. Predicate Calculus: Resolution

- 7.1: read only
- 7.2: 1
- 7.3: 2, 3, 4
- 7.4: read only
- 7.5: 5
- 7.6: 6, 7
- 7.7, 7.8: 8, 9, 10, 12

8. Logic Programming

- 8.1: read only
- 8.2: 1-7
- 8.3, 8.5: 10, 11

9. Programs: Semantics and Verification (time permitting)

- 9.1: read only
- 9.2, 9.3: 1-4
- 9.4: 7-10
- 9.5, 9.6: read only

10. Temporal Logic (time permitting)

- 11.2: 1, 2
- 11.3: 3, 4 (hard), 5
- 11.4: 6, 9, 10
- 11.5: 11
- 12.1: 1-6
- 12.2: 8, 9