

# A solutions manual for Set Theory by Thomas Jech

In 2017, for no special reason I started studying mathematics, and writing a solutions manual for [Set Theory by Thomas Jech](#).

## Part I: Basic Set Theory

1. [Axioms of Set Theory](#) *wip*
2. Ordinal Numbers
3. Cardinal Numbers
4. Real Numbers
5. The Axiom of Choice and Cardinal Arithmetic
6. The Axiom of Regularity
7. Filters, Ultrafilters and Boolean Algebras
8. Stationary Sets
9. Combinatorial Set Theory
10. Measurable Cardinals
11. Borel and Analytic Sets
12. Models of Set Theory

## Part II: Advanced Set Theory

13. Constructible Sets
14. Forcing
15. Applications of Forcing
16. Iterated Forcing and Martin's Axiom
17. Large Cardinals
18. Large Cardinals and  $L$
19. Iterated Ultrapowers and  $L[U]$
20. Very Large Cardinals
21. Large Cardinals and Forcing
22. Saturated Ideals
23. The Nonstationary Ideal
24. The Singular Cardinal Problem
25. Descriptive Set Theory
26. The Real Line

## Part III: Selected Topics

27. Combinatorial Principles in  $L$
28. More Applications of Forcing
29. More Combinatorial Set Theory

- 30. Complete Boolean Algebras
- 31. Proper Forcing
- 32. More Descriptive Set Theory
- 33. Determinacy
- 34. Supercompact Cardinals and the Real Line
- 35. Inner Models for Large Cardinals
- 36. Forcing and Large Cardinals
- 37. Martin's Maximum
- 38. More on Stationary Sets