Math 446 — Final Exam — Review Topics after Exam 2

Chapter 9. Choice's Consequences, continued.

cardinal minimum and supremum lemmas
König's Theorem
cofinality of cardinal numbers
$\kappa < cf(2^\kappa)$

Exercises x9.9, 9.14, 9.20

Chapter 11. Replacement and Other Axioms.

axiom of replacement
transitive sets and the transitive closure
pure sets, grounded sets, axioms of purity and foundation

You are not responsible for the results about graphs, Zermelo universes

Exercises x11.3, 11.5, 11.14

Chapter 12. Ordinal Numbers.

definition and properties of the "von Neumann" map, referred to as o_U in class
ordinals and the class ON of ordinals
properties and characterization of ordinal numbers
ordinal comparability and the well-ordering of ON
ordinal induction and recursion
$+$ and $\cdot$ on ordinals
definition and properties of the "von Neumann" cardinals
the sequence of alephs
cardinal arithmetic
cumulative, or rank, hierarchy V_α and the rank of a set
normal operations
cofinality of ordinals and its equivalence with the earlier definition on cardinals

Exercises x12.5, 12.9, 12.10, 12.13, 12.29