MATH 445 — FINAL EXAM REVIEW

Topics After Exam 2

- the Compactness Theorem: statement, proof, and uses
- the Peano Axioms for arithmetic on the natural numbers, and deductions from **PA**
- representability in **PA**
- recursive functions and relations: definition, properties, and showing recursivity
- sequences, sequence numbers, and operations on them
- course-of-values recursion
- representability of recursive functions and relations in **PA**, use of the β-function
- Gödel numbers and operations on them
- the Incompleteness Theorem: statement and proof