

Review for Math 2300 Quiz 2, Spring 2016

3rd Edition: Chapters 4 and 8. Excludes 4.5 and 8.4.

4th Edition: Chapter 5, Sections: 1, 2, 3, 4, 6, 7, 8

You may bring one 3x5 inch card in your own hand writing and a calculator not connected to the internet.

Define

- Sequence
- Recurrence
- Recursive definition

Sequences

- Find formula, given the terms (must specify index set)

- Write recursive definition, given the terms

- Formulas for arithmetic and geometric finite sums

$$\sum_{i=1}^n i \qquad \sum_{i=0}^n r^i$$

Sequences that you should know and recognize

- n!
- Towers of Hanoi
- Fibonacci

Induction proofs (5 numbered steps)

- Formulas
- Divisibility
- Inequalities
- Formula, given recursive definition of a sequence

Solving Recurrences

- Iterate and guess (check by induction)
- Theorems (use to find formulas with numbered steps)
 - SOLHRRCC – distinct roots
 - SOLHRRCC – repeated roots