

Test 4 Review

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CSCI 340: Computational Models

In general, homework problems are representative of what will be on the test. This is just a high-level overview of what's been covered. If you are unsure if something will be on the test, just ask!

Questions asked on the exam may be: True/False, Multiple Choice, Short Answer, or otherwise similar to the nature of homework problems assigned

- **Post Machines**

- Definition
- Differences from TMs
- Equivalence to TM

- **Minsky's Theorem**

- 2-Stack PDAs
- Equivalence to TM
- n PDAs and equivalence

- **Variations of a Turing Machine**

- Examples and Definitions
- Equivalence / Power

- **Turing Machine Languages**

- Recursive vs. Recursively Enumerable
- Closure and relationships under complementation, intersection, union, etc
- Encoding of Turing Machines (Code Word Language)
- Non-recursively enumerable languages (ALAN). Also MATHISON
- Universal Turing Machines
- Halting Problem
- Decidability

- **Chomsky Hierarchy**

- Phase-Structure Grammars
- Type 0 Grammars
- The Chomsky Hierarchy
- Context-Sensitive Grammars
- The Language L

- **Computers**

- Definition of a computer
- Computable functions (and some examples: PLUS, MULT, POW, IDENTITY, SUCCESSOR)
- Church's Thesis

- **Prior Material – up to 20% of the exam may come from homework and prior exams**