

CS 3613: Theoretical Foundations of Computing Spring 2009

Homework 7 (Final Version): Context-Freedom and Turing Machines

Due Date: April 27, 2009

Notes:

- Read Course Information: Section 7 (Miscellaneous) and Section 9 (Academic Dishonesty or Misconduct).
- When you are giving a construction, example, etc., provide a justification with your argument. Your solutions to numerical problems must contain the derivation of your answers. In all of your presentations, strive for correctness, completeness, and clarity. When in doubt about the assumptions of problems, the interpretations of wording, etc., consult the instructor.
- You should strive to complete all problems assigned, and a subset of them will be graded.

1. Read the notes above carefully.
2. Do [Sip06] Chapter 2, problems 2.31, 2.32, 2.42, and 2.43.
3. Do [Sip06] Chapter 3, exercise 3.8 (b) and (c). For each machine constructed, give its formal 7-tuple definition (including the definition of the deterministic transition function) and brief interpretations for the states/transitions.