

# CS 3613: Theoretical Foundations of Computing      Spring 2009

Homework 2: Regularity

Due Date: February 9, 2009

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## 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 1, exercises 1.4 (f) and (g), 1.5 (g) and (h), 1.6 (h) and (i), 1.12; and problems 1.33, 1.37, and 1.41.

Note:

- (a) For deterministic finite automaton construction, give brief and precise interpretations for the states of the machine, and
- (b) For exercise 1.12, ignore the part on regular expression.

3. Do [Sip06] Chapter 1, problems 1.40 (b), 1.48, 1.59, and 1.61.