

Use the pdf problem set posted to the website, as the numbering differs from that of the text.

Recitation (ungraded)

Attempt these before the recitation and check your solutions and solution process with TAs.

- (1) DMC Problem 23.11, 23.13, 23.30(e), 23.32
- (2) DMC Problem 24.11(x), 24.12(i), 24.14, 24.17

Problems (Submit solutions)

Show your work and explain your reasoning. Write in complete and grammatically sound sentences, and typeset your solution. See this $\text{\LaTeX}$ source file and the corresponding pdf for an example of an acceptable solution set.

- (1) **[12]** DMC Problem 23.15(g)
- (2) **[12]** DMC Problem 23.24(a)
- (3) **[12]** DMC Problem 23.30(b)
- (4) **[14]** DMC Problem 23.34(a)

Draw your DFAs as diagrams and include them.

- (5) **[12]** DMC Problem 24.11(u)
- (6) **[12]** DMC Problem 24.12(f) give the separate DFAs, and the one built from them
- (7) **[14]** DMC Problem 24.18
- (8) **[12]** DMC Problem 24.29(c) give the simplest answer

Bonus

Submit a correct solution to DMC Problem 23.41 *or* DMC Problem 24.30 at the end of your solution to this problem set, clearly labeled.

- (i) You'll get full credit for a well-written, correct proof, and zero credit and perhaps no substantive response otherwise (this depends on the number of students who submit a solution).
- (ii) You are to solve this without discussion with anyone, including TAs and me.

For the preceeding reasons, do not attempt this problem unless you think it will be a rewarding/enriching experience in itself to wrestle with it. That said, a correct solution will net you a bonus 1% added to your final percentage in the course (future bonuses will not stack past the 2% mentioned in the syllabus).