

**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 25.8(h,r,t), 25.9(b), 25.16(a,d)
- (2) DMC Problem 26.5(b), 26.6(c), 26.8(f)

**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 25.8(g)
- (2) [12] DMC Problem 25.9(d)
- (3) [14] DMC Problem 25.16(c)
- (4) [12] DMC Problem 25.24(b)

Draw your Turing machines as diagrams and include them.

- (5) [12] DMC Problem 26.5(g)
- (6) [12] DMC Problem 26.6(g)
- (7) [14] DMC Problem 26.8(d)
- (8) [12] DMC Problem 26.10

**Bonus**

Submit a correct solution to DMC Problem 25.29 *or* DMC Problem 26.11 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 preceding 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).