

CS311, Spring 2009, Ali Erkan
Problem Set
Due Date/Time: Feb 16, 2009 (Monday), 2:00PM

- **Use neat handwriting.** If I cannot read what you write, then I have to assume that your answer is incorrect. You will win a special place in my heart if you submit typed solutions. If you want to try this out, consider Mathematica or LaTeX (with some help from Ali).
 - **Our lateness policy is simple:** 1% off for the first hour and 100% off thereafter.
 - **As of the beginning of the semester, you have three late days.** If you choose to use a late day, then your effective deadline is the due time of the following day. Two or three days of lateness cannot be used at once.
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Please submit your solutions to the following questions from the book:

- Exercise 2.20.
- Exercise 2.22.
- Exercise 2.26.c.
- Exercise 3.34 (a Microsoft interview question).
- Exercise 3.36.
- Exercises 4.2.d, and 4.2.e.
- Exercise 4.5.
- Exercise 4.8.
- Exercise 4.9.
- (8 points) Does recursion always lead to $N \lg N$ complexity? To answer this question, compute the asymptotic complexity of a recursive function whose work is modeled with the recurrence relation $f(n) = n + f(n - 2)$.