

CS 1050 Section B, Spring 2001
Homework 8 – due Tuesday, April 17

Part I

Problem 1 Exercise 18, page 317.

Problem 2 Exercise 34, page 318. What is the solution to your recurrence?

Problem 3 Exercise 4(a,b,c), page 330.

Problem 4 Exercise 14, page 337. What is the solution to your recurrence?

Part II

Problem 5 Supplementary exercise 10, page 370.

Problem 6 Supplementary exercise 12, page 370.

Problem 7 Prove that the solution to the recurrence

$$T(n) = T(n - 2) + 1$$

is $T(n) = O(n^2)$.

Problem 8 Use Theorem 2 on page 336 to find the asymptotic (big O) solution to each of the following recurrences:

(a) $T(n) = 9T(n/4) + n^2$

(b) $T(n) = 9T(n/3) + n$

(c) $T(n) = 3T(n/2) + n$

(d) $T(n) = 2T(n/4) + \sqrt{n}$

Extra Credit

Problem 9 Exercise 20, page 317.

Problem 10 Prove that the solution to the recurrence

$$T(n) = T(\lfloor n/2 \rfloor) + T(\lceil n/2 \rceil) + 1$$

is $T(n) = O(n)$.