

Participation 2

Due Thursday, June 19, at 9 AM (GMT-7)

CSc 345 – Summer 2014

Instructor: Qiyam Tung

Instructions

1. This is an individual assignment. You must do your own work.
2. If you are having difficulty and need to ask a question you can:
 - (a) Ask questions in class.
 - (b) Stop by my office hours (or make an appointment).
 - (c) Post a question on Piazza.
 - (d) Post a private question on Piazza if the question is too specific.
3. Show all work. I will be grading on whether you put effort into this problem (i.e. participation) and not correctness. Showing your work helps me identify your thought process and helps me with grading.
4. You may write your solutions by hand, or you may type them using any appropriate program such as Microsoft Word, OpenOffice Writer, L^AT_EX, etc. . . . However, the final copy should be in PDF form and formatted so that it is legible.
5. If the listed problem is only a number, refer to the online book for the description of the problem (starting at page 46).

A Curious Recurrence Relation (5 points)

Consider the following recurrence relation

$$T(n) = n + \sqrt{T(n)} \tag{1}$$

where $n \geq 1$. There is no base case.

What to turn in

Does there exist a closed form for this equation? If so, show what the solution is. If not, make a case why this is the case.

Clarificatoin

The nature of these “participation” problems is to make you think beyond the typical problems given in the homework. That usually means the problems are more difficult than usual. As a result, it may not fit into our standard way of proving conjectures.

Nevertheless, you should give a logical argument that should have some semblance to one of the proof methods (direct, contradiction, inductive, etc.).

When you are asked to “make a case,” it means present a formal argument. I will continuously give comments on the participation problems, so be sure to avoid your previous participation errors.