

CSC373 Worksheet 0 Solution

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1. Notes:

- Substitution method
 - Solves recurrences
 - * Recurrence characters the running time of divide-and-conquer algorithm
 - How it works:
 1. Make a guess for the solution
 2. Use mathematical induction to prove the guess is correct or incorrect.

Example:

Recurrence: $T(n) = 2T(\lfloor n/2 \rfloor) + n$

Guess: $T(n) = \mathcal{O}(n \log n)$,

We need to show $T(n) \leq cn \lg n$.

1.