

Quickcheck 07: The tree method

Name:

Consider the following recurrence:

$$T(n) = \begin{cases} 9 & \text{if } n = 1 \\ 8T(n/5) + n & \text{otherwise} \end{cases}$$

- (a) Draw out a visualization of what this recurrence looks like as a tree.
- (b) How much work is done on level i ?
- (c) How many recursive levels are there in the tree?
- (d) How much work is done at the leaf level?
- (e) Construct a non-recursive expression equivalent to the recurrence. Your solution may use a summation.
- (f) Use the master theorem to find the big- Θ bound for the recurrence.

Another question

Do you have any questions about this course? It could be about policy, content, instructors, TAs, etc.