

Algorithms and Complexity I Hw 1

For the recurrences given below, please write the asymptotic lower bounds and upper bounds. You may assume $T(n)=1$ for $n \leq 2$. Calculated bounds should be as tight as possible. You may use substitution, iteration and master theorem techniques as you wish.

1. $T(n)=2T(n/2)+n^3$
2. $T(n)=16T(n/4)+n^2$
3. $T(n)=7T(n/2)+n^2$
4. $T(n)=T(n-1)+n$
5. $T(n)=T(\sqrt{n})+1$ (sqrt: karekök)
6. $T(n)=3T(n/2)+\log n$
7. $T(n)=2T(n/2)+n/\log n$
8. $T(n)=T(n-1)+1/n$
9. $T(n)=T(n-1)+\log n$
10. $T(n)=\sqrt{n}T(\sqrt{n})+n$

Deadline: 18.October.2012, 23.59

Submission: Please submit your homework to Murat Kurt either by hard copy or via e-mail (murat.kurt@ege.edu.tr ve muratkurtube@gmail.com). If you choose to send your homework via e-mail please send your homework to both e-mails.

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