CSE250 Fall 2016
Assignment A4 – Recursion

Due: 10/30/2016, 11:59PM

Last updated: *2016-10-23 22:32*

Objectives

- Practice solving recursions.

Problem

Solve the following recurrences using recursion tree method:

1. $T(n) = 4T\left(\frac{n}{2}\right) + n^2 \lg(n)$
2. $T(n) = 5T\left(\frac{n}{3}\right) + O(1)$
3. $T(n) = 6T\left(\frac{n}{2}\right) + n^3$
4. $T(n) = 4T\left(\frac{n}{4}\right) + n$
5. $T(n) = T\left(\frac{2n}{3}\right) + n^2$
6. $T(n) = 2T\left(\frac{n}{3}\right) + n$
7. $T(n) = 5T\left(\frac{n}{3}\right) + n \lg(n)$
8. $T(n) = 2T(n-1) + \lg(n)$
9. $T(n) = 3T(n-2) + \lg^2(n)$
10. $T(n) = 2T(n-2) + \lg(n^2)$

Clearly state all applied transformations.

Submission

Type or write your solution on (US)Letter-sized paper clearly marking the number of pages, your first and last name and your UBIT name. Make sure to clearly mark which problem you are solving. Prepare **PDF** file named `A4.pdf` with your solution. Follow to https://autograder.cse.buffalo.edu and submit `A4.pdf` for grading.

Grading

- If solution is unsigned (anonymous) – 0pt
- Each recursion is 10pt
- Solution typeset in LaTeX– extra 10pt