

Algorithms and Programming I

Home Work 2

Recurrences

Problem (1)

Solve the following recurrences using recursion tree:

$$T(n) = 3T(n/3) + n^2$$

Problem (2)

Solve the following recurrences using Master theorem:

1. $T(n) = 16 T(n/4) + n^2 \log_3 n$

2. $T(n) = T(4n/5) + \Theta(n)$

3. $T(n) = 2T(n/4) + 1$

4. $T(n) = 2T(n/4) + n^2$