

Tutorial 2

COMP 3601

Design and Analysis of Algorithms

Question 1

Solve the recurrence by the backward substitution method

$$T(n) = T(n - 1) + 1, \quad \text{for } n > 1, T(1) = 1$$

Question 2

Solve the recurrence by the backward substitution method

$$T(n) = 2T(n - 1) + 1 \quad \text{for } n > 1, T(1) = 1$$

Question 3

Solve the recurrence by the backward substitution method

$$T(n) = T(n / 2) + 1 \quad \text{for } n > 1, T(1) = 1, \text{ where } n = 2^k$$