Practice Set Problems (Recurrence Relation)

1) $T(n) = T(n/2) + T(n/2) + n$ → Recursive Tree Approach

Solution → $O(n \log n)$

2) $$T(n) = \begin{cases} 1 & n = 1 \\ 8T(n/2) + n^2 & n > 1 \end{cases}$$

Solution → $O(n^3)$

↳ Substitution method

3) $$T(n) = \begin{cases} 1 & n = 1 \\ T(n/2) + c & n > 1 \end{cases}$$

Solution → $O(\log_2 n)$

↳ Substitution method