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CMPT 435 - Extra Assignment #2

$$\begin{aligned} 1) \quad T(n) &= O(n) + 2T(n/2) \\ &= O(n) + 2(O(n/2) + 2T(n/4)) \\ &= O(n) + O(n) + 4T(n/4) \\ &= O(n) + O(n) + O(n) + 8T(n/8) \\ &= O(n \log n) \end{aligned}$$

$$O(n) = n \log n$$

$$2) \quad O(n) = n \log n$$