Homework 2.3

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2.3-4 Divide: This step divide the array into two parts: T(n-1) and 1. So D(n)=$O(1)$

Conquer: T(n-1)+1

Combine: For n-element, there are n-1 levels, so C(n)=$O(n-1)$

2.3-7 Use the merge sort algorithm to sort the integers in set S, which costs $O(nlgn)$, then find the $x/2$ using the binary search algorithm, this will cost $O(lgn)$, and last, for each integer k from $x/2$ to x in set S, search weather there is an integer m, which satisfies $m = x - k$ using binary search, this will cost $O((x/2)lg(x/2))$. The total cost is $O(nlgn)$