Name:…… Q8

CS2123 Data Structures

You are given array of integers. The size of the array is N. What would be complexities of the following operations when the array is unsorted or sorted? Give the complexities using big-O notation.

Operation	If Arr is unsorted,	If Arr is sorted,
Search(Arr, key);		
Insert(Arr, x);		
Delete(Arr,x);		
Min(Arr);		
Max(Arr)		
Sum(Arr);		
Average(Arr);		

Algorithm steps: $5 + 7 \cdot N$ Big O notation: .....

Algorithm steps: $5 + 13 \cdot N + 7 \cdot N^2$ Big O notation: .....

Algorithm steps: $5 + 13 \cdot N + N \log(N)$ Big O notation: .....

Algorithm steps: $5 + 13 \cdot N^2 + N \log(N)$ Big O notation: .....