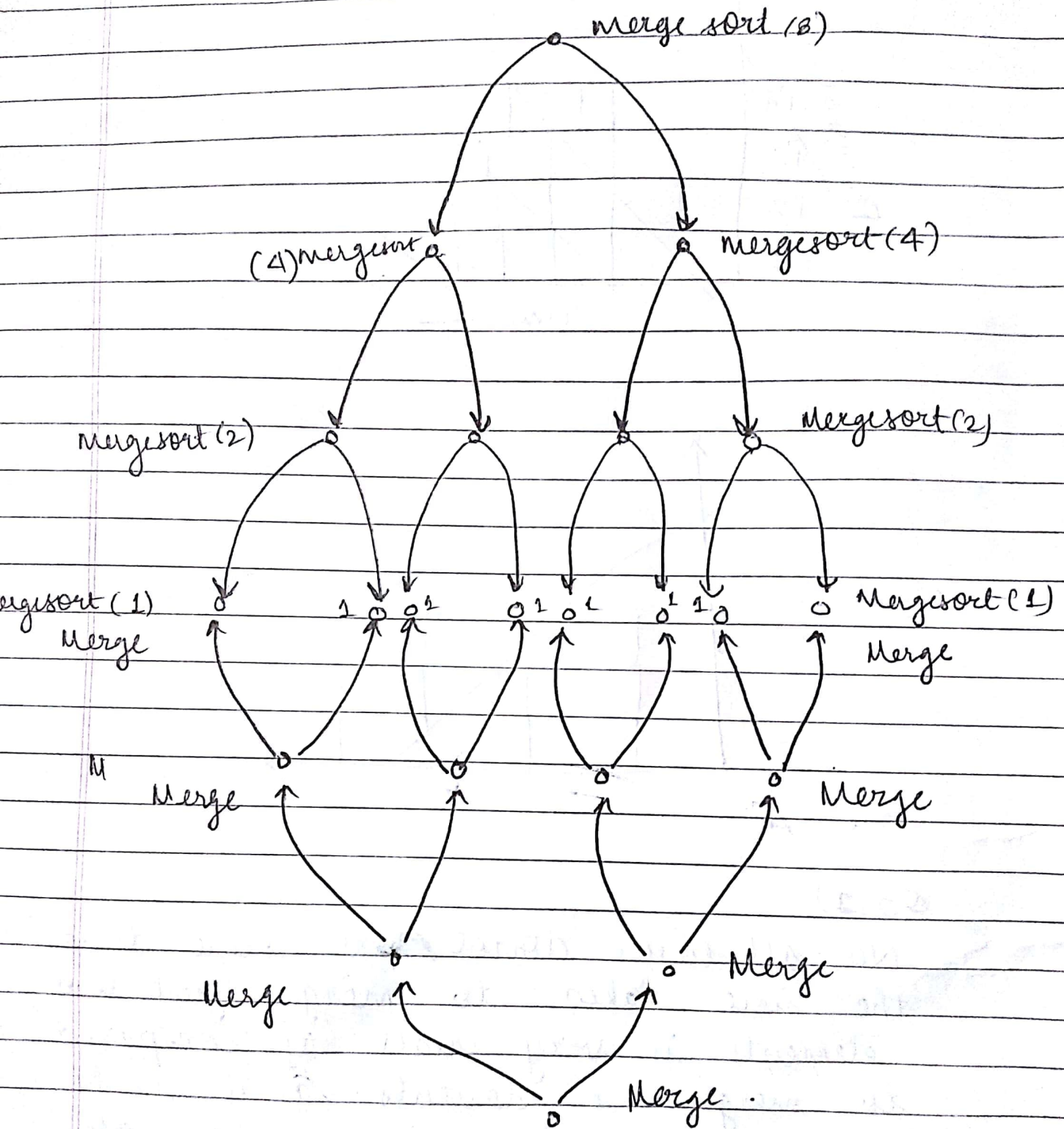


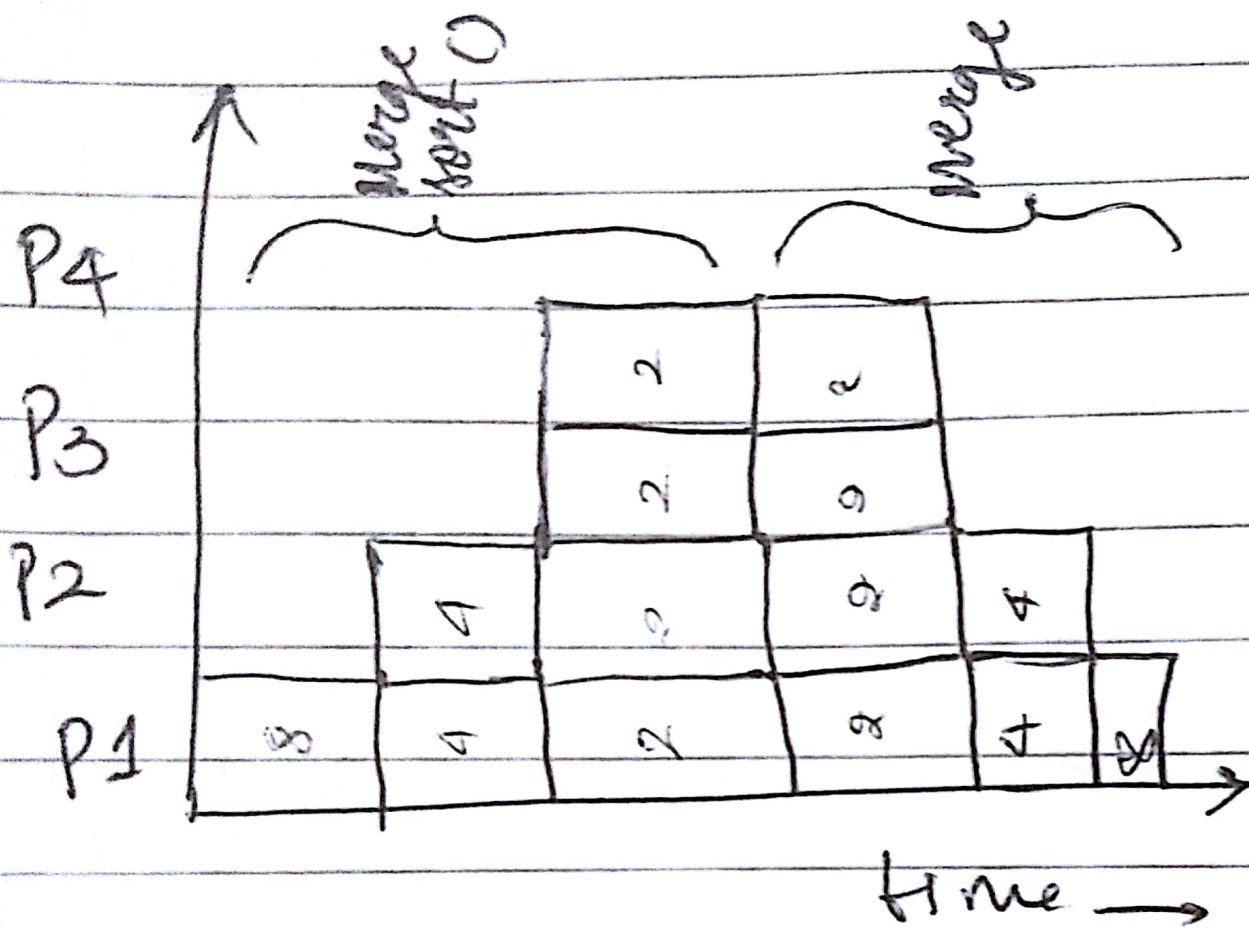
# Q5) Merge sort.



Width =  $n$

Work =  $2(n) \theta(2n)$

CP =  $n+1$ .



Q5.2)

No, all tasks don't take same time. The time taken to merge just two elements is very small as compared to merge 8 elements. As it needs to compare all small chunks of sorted arrays before placing the element in the sorted array. So, the tasks do take different times.