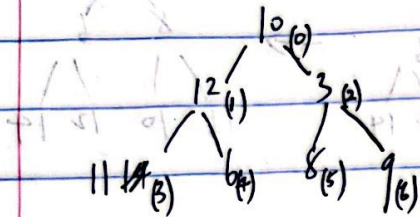


part 4.

(a) $[10, 12, 3, 11, 6, 8, 9]$



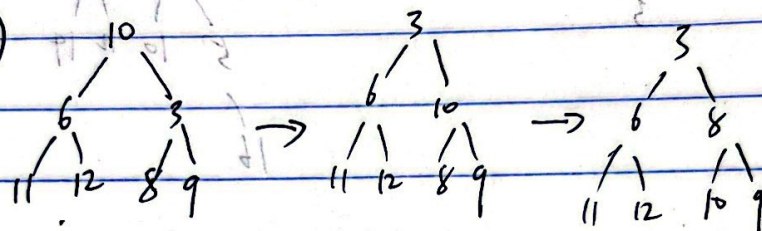
heapify(2)



heapify(1)

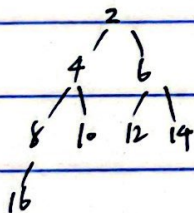


heapify(0)

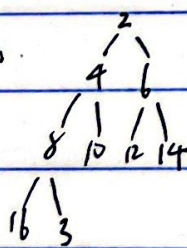


$[3, 6, 8, 11, 12, 10, 9]$

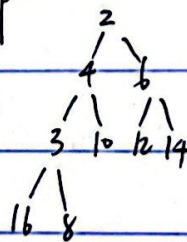
(b) initial :



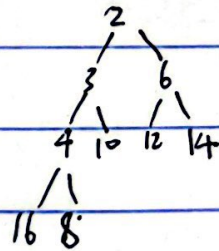
insert 3 :



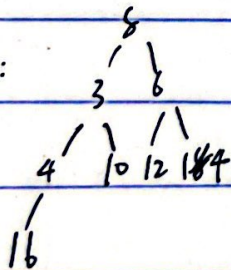
trickle up



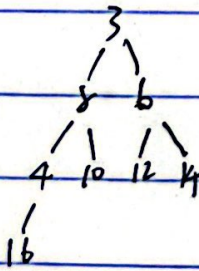
heapify



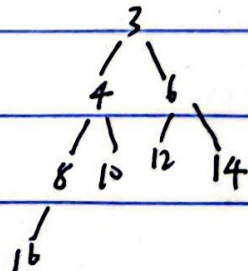
pop :



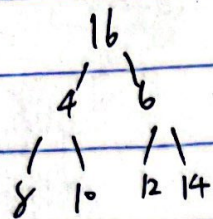
heapify



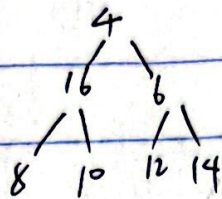
heapify



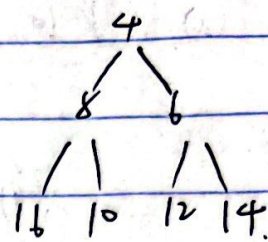
pop.



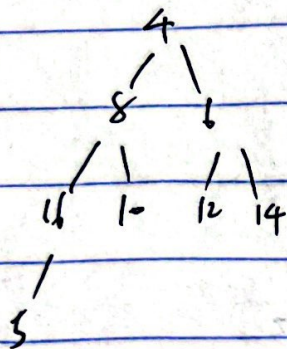
heapify



→

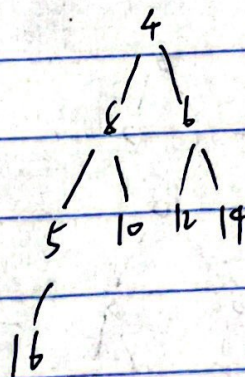


Insert 5 :



bubble up

→



→

