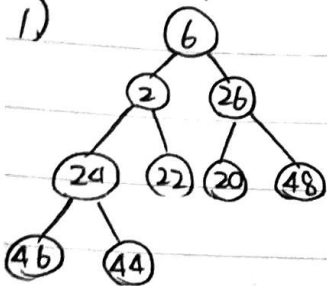


# Heap Operation

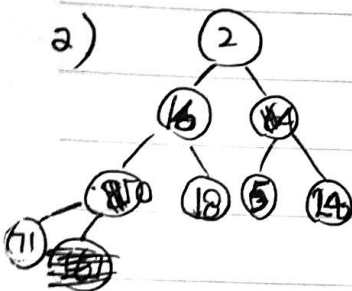
Pa 1)



Not valid ~~min~~ Binary Min heap.

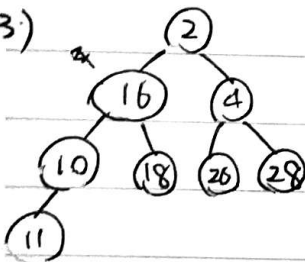
Numbers on index 1, 5 ~~don't~~ violate the heap property

a)



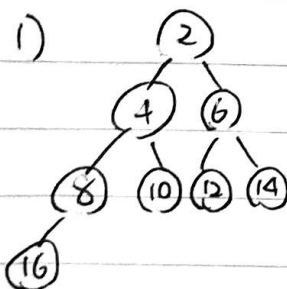
Valid Binary Min Heap

3)

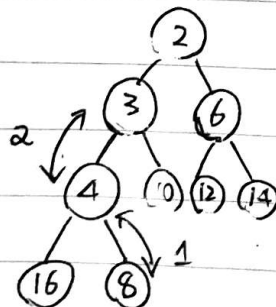


Not. Numbers on index 4 is less than the parents. Thus it is out of range.

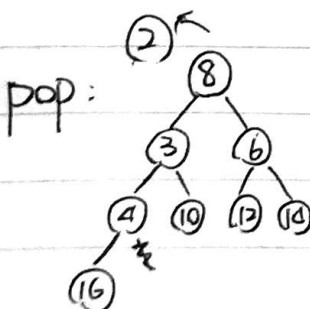
Pb. 1)



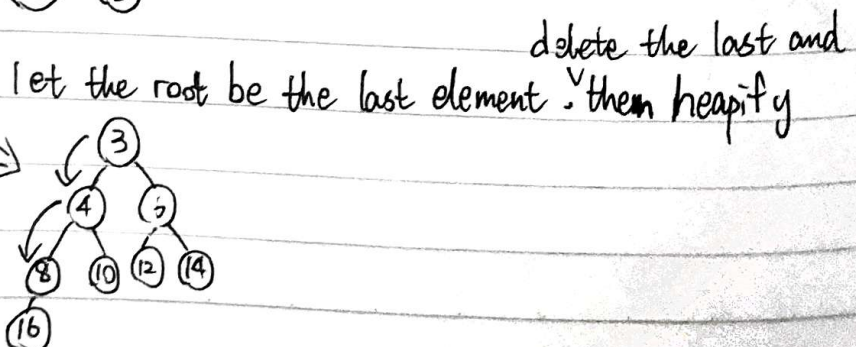
Insert 3:



push at the last and tricked up

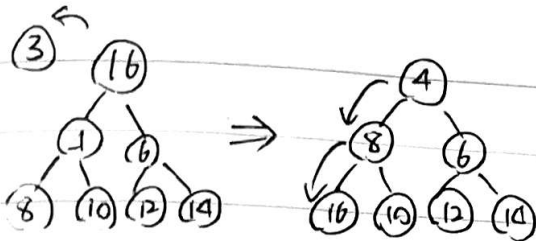


pop:



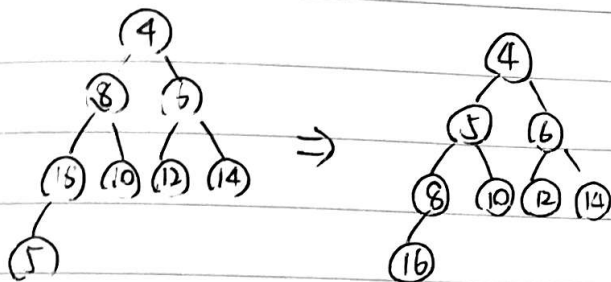
delete the last and let the root be the last element. then heapify

pop: same as above

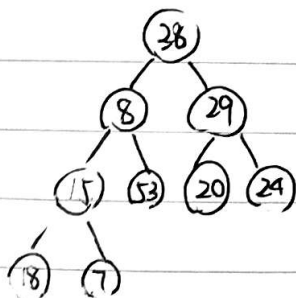


Insert 5:

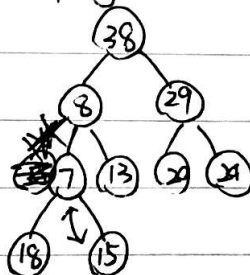
insert at the end and trickle up



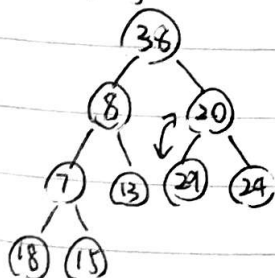
Pc First, start from the ~~leaf~~ first non-leaf



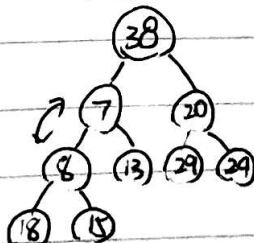
① heapify(3)



② heapify(2)



③ heapify(1)



④ heapify(0)

