

B Tree

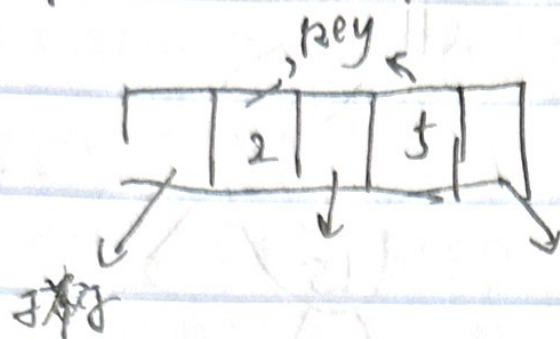
m 叉数

每个结点至多有 m 子数, 至多 m-1 个关键字 (key)

$(\lceil \frac{m}{2} \rceil - 1, m-1)$

除根结点外的所有非叶结点至少有 $\frac{m}{2}$ 子树, 至少 $\lceil \frac{m}{2} - 1 \rceil$ 个关键字 (key)

向上取整

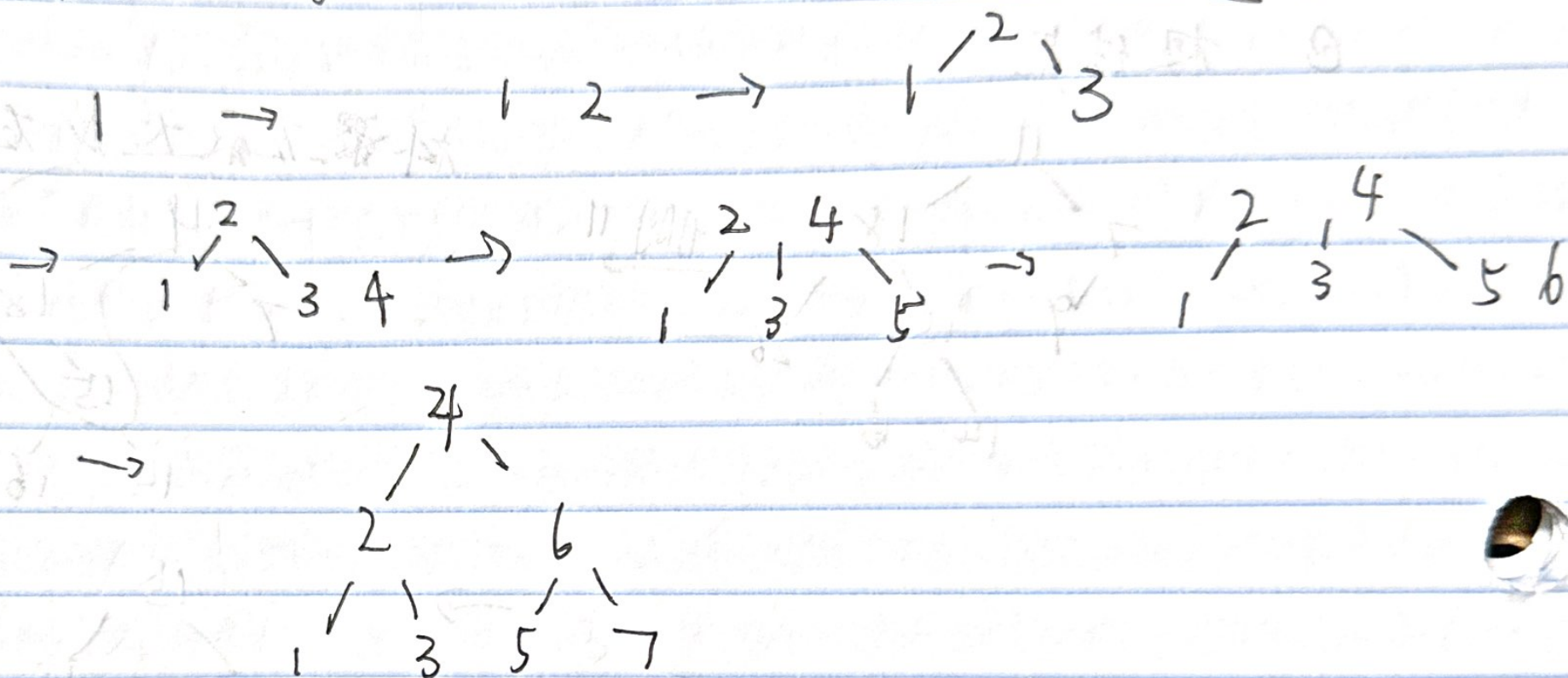


eg. 叉 = 叉数

每个结点 1 个 key, 2 个分支
但二叉树效率不高

Insert. eg. For $N=3$ (3 way (degree 3) Order 3 B Tree)

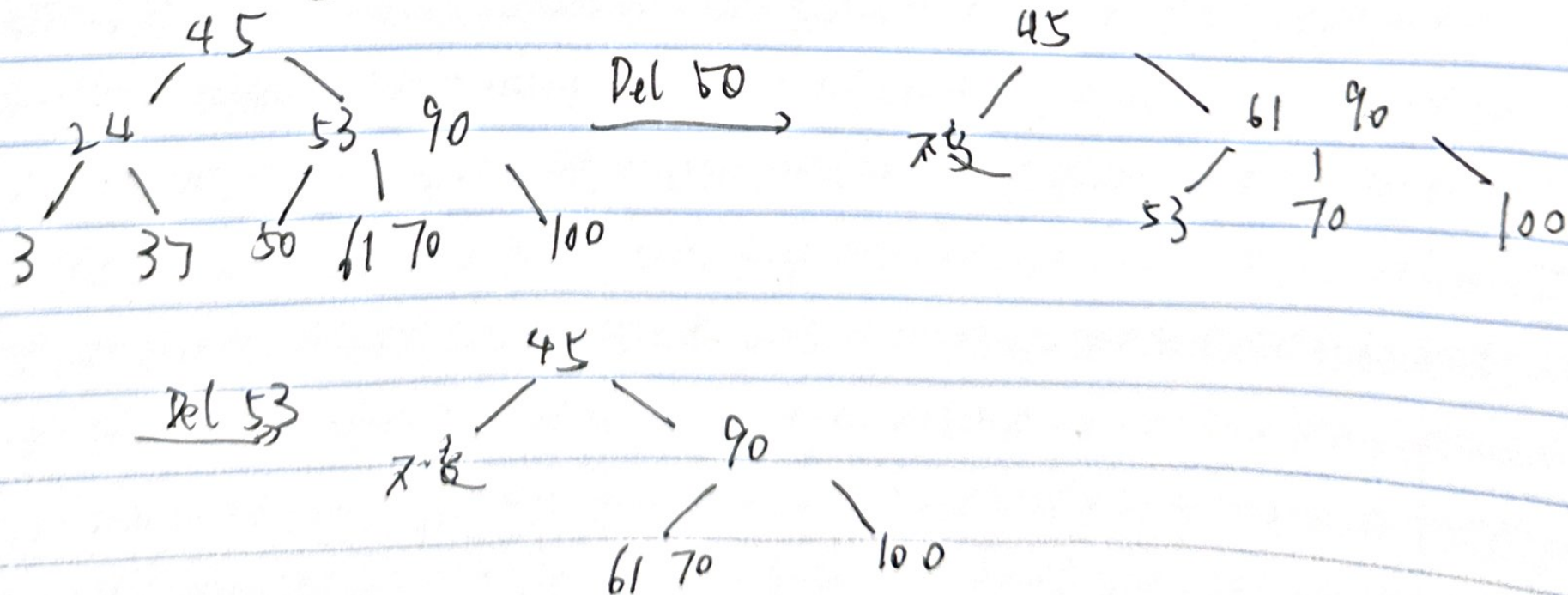
Max child 5



查找: $O(\log M)$

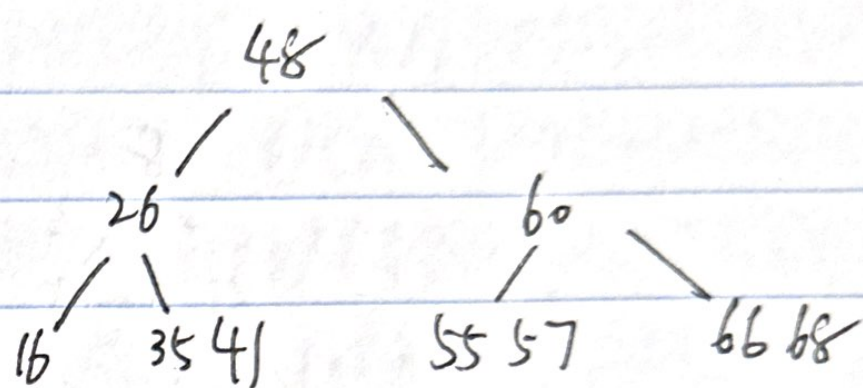
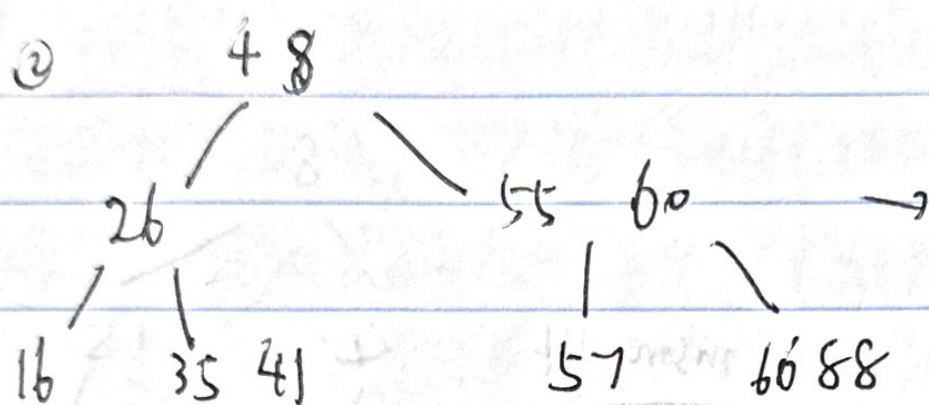
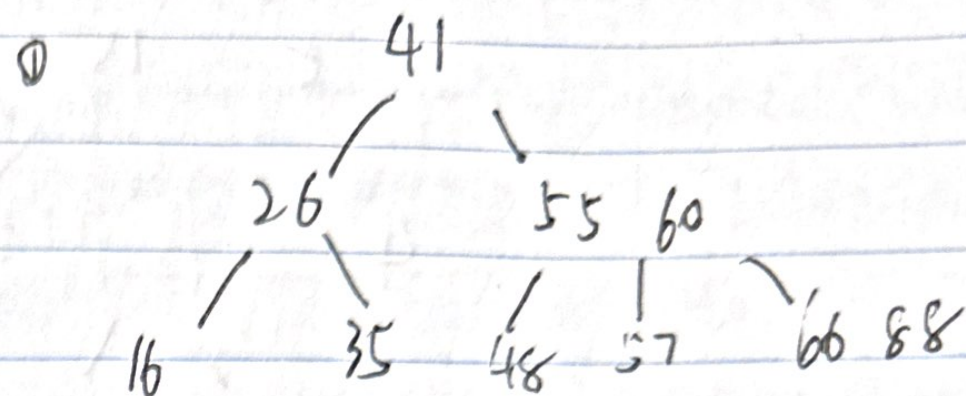
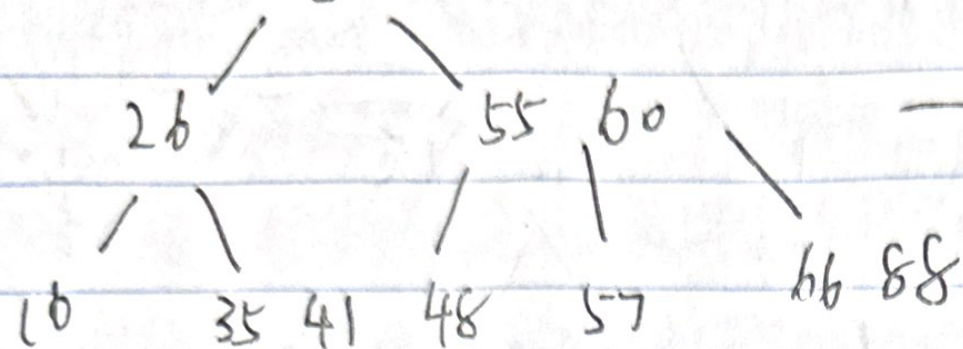
添加: $O(\log N)$

Deletion: eg. 3 way B tree child: (1, 2)



根结点删除：左树最大值或右树最小值替换

eg. Degree 3 $I_1, 21$



$O(\log N)$

