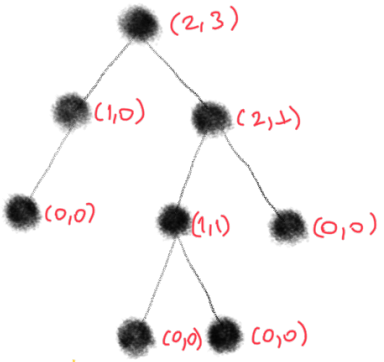
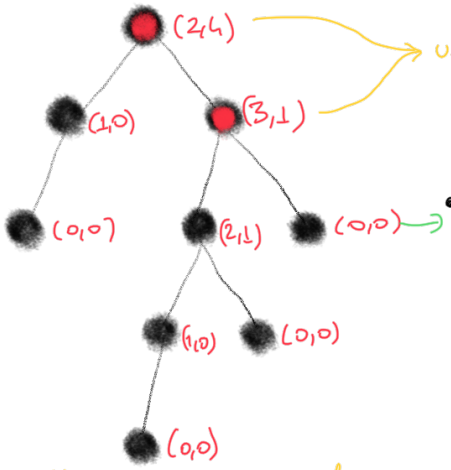
avl trees

a binary search tree with a balance condition (adel'son-vel'skii and la

* the height of the left and right subtrees can differ by at most 1.



this is a avl tree



unbalanced nodes

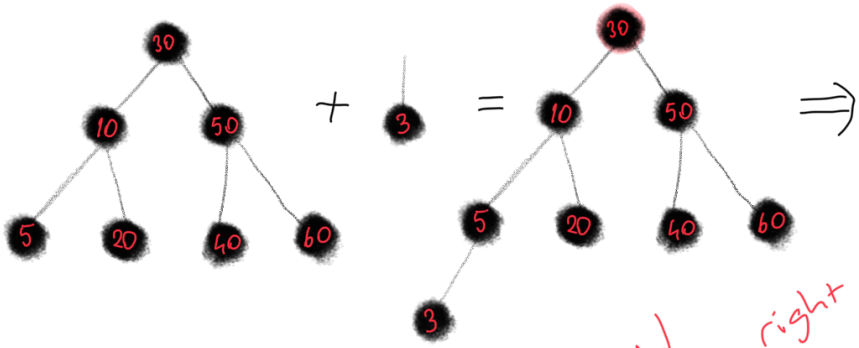
this is not a avl tree

- these are the number of nodes.
- the height of th left and right sub the of a is 0.

- minimum tree of height $h = \log n$.
- find, insert and remove are worst case $\log n$.
  ↳ because they depends totally on find operation but height must be bala

rebalancing

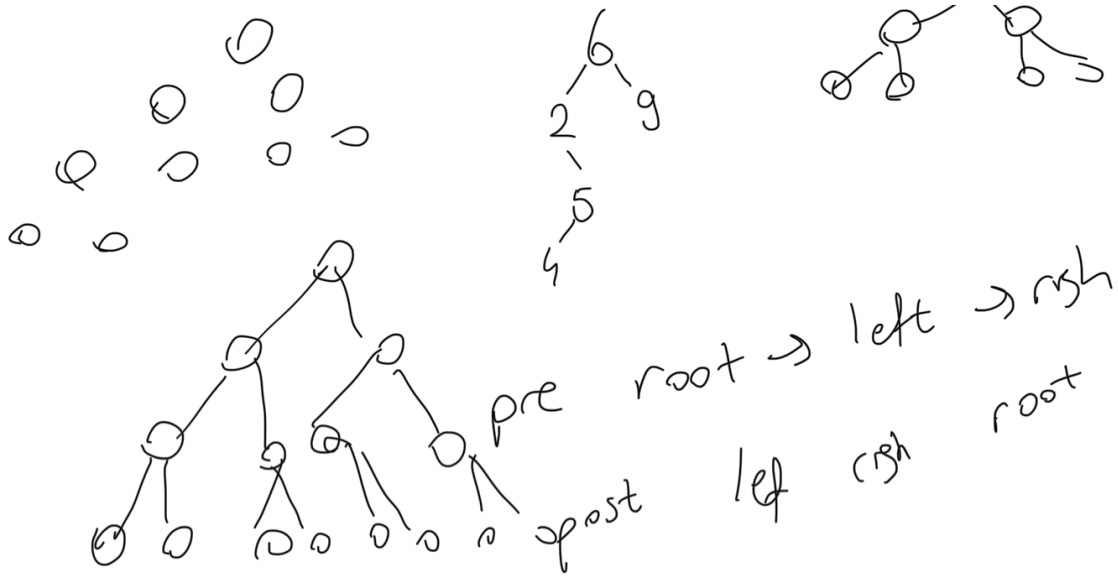
① insertion in left subtree's left child (LL)



left child attaches the right subtree of it

L - R → e
r

L - L → R


6
2
9
5
4
pre root → left → rgh
post left rgh root