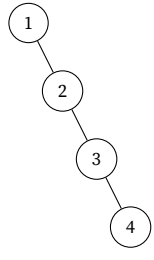
AVL



We usually perform AVL-insertion on AVL-trees. However, we can apply the same procedure on ordinary binary search trees (given that each node stores the height of its subtree).

To the right, you see a binary search tree which is *not* and AVL-tree. Insert 5 into the tree using AVL-insertion.

(a)

What will the tree look like after the first rotation during the insertion?

(b)

Note that a double rotation counts as two single rotations.
How many single rotations are performed during the insertion?

(c)

Is the resulting tree an AVL-tree?

(d)

What is the value stored in the root node after the insertion is completed?