

2232 AS 03

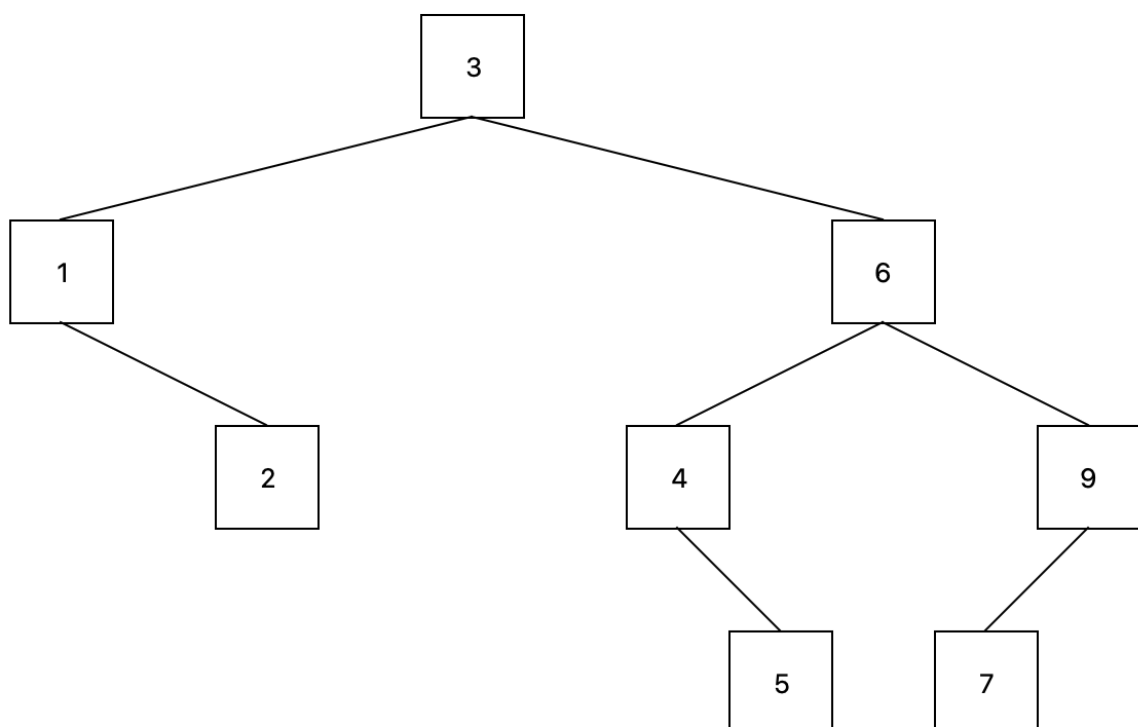
Main

Question 1

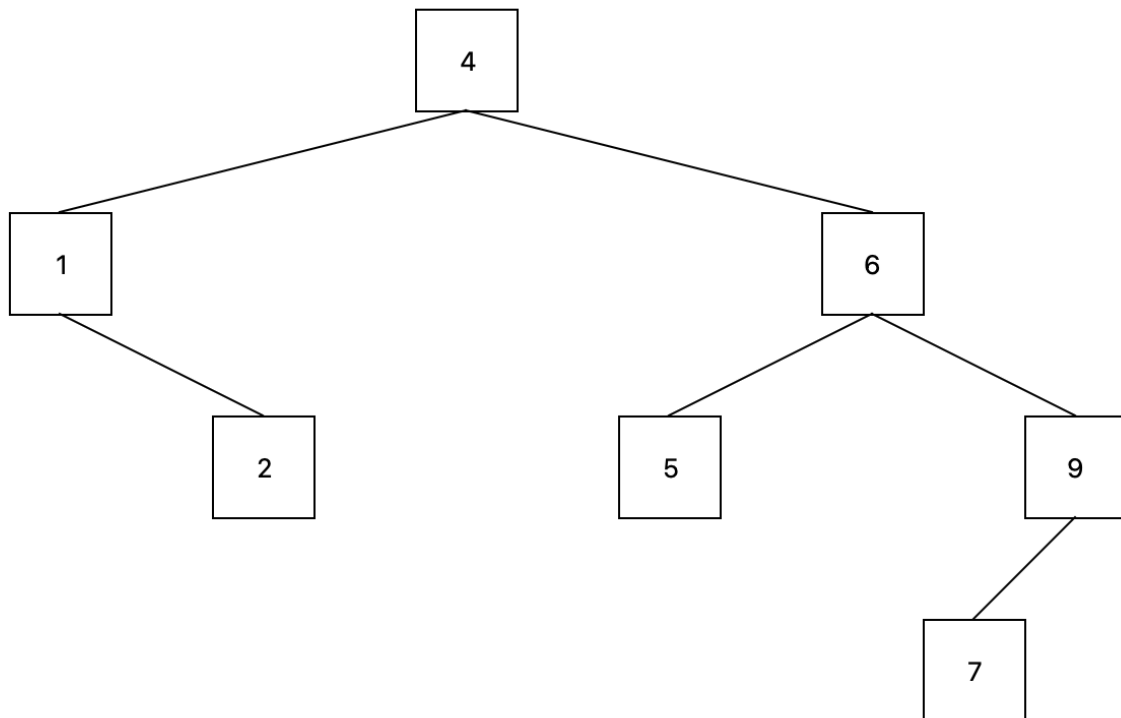
Show the result of inserting 3, 1, 4, 6, 9, 2, 5, and 7 in an initially empty search tree. Then show the result of deleting the root.

Solution 1

Inserting 3, 1, 4, 6, 9, 2, 5, and 7



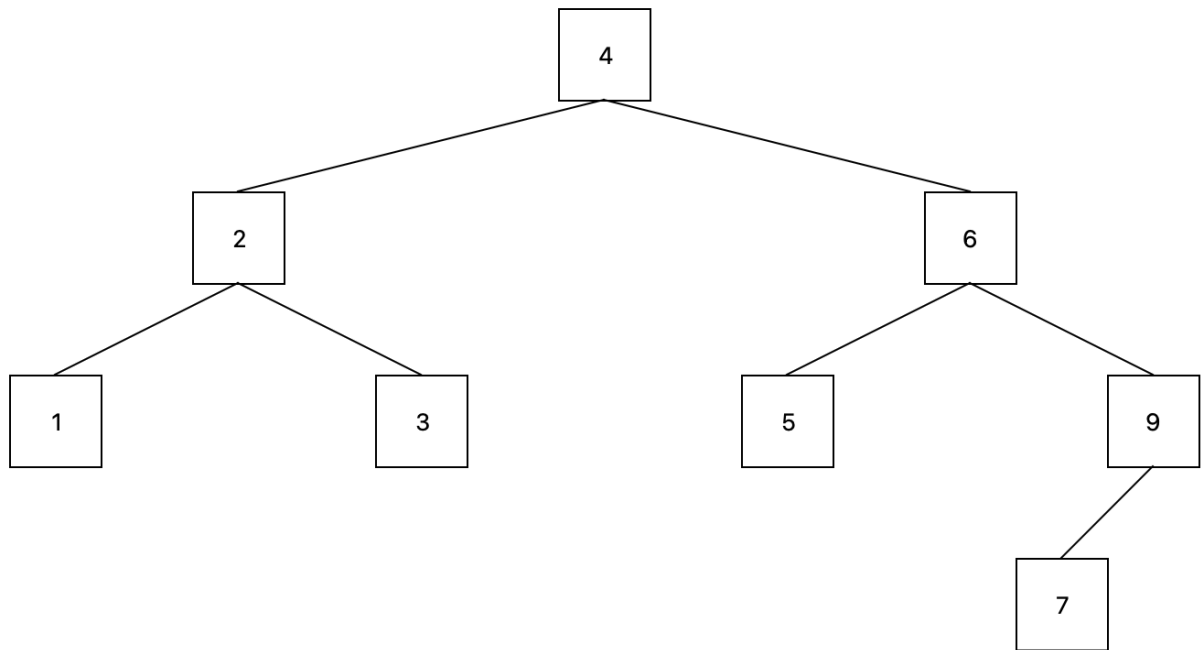
Deleting the root 3



Question 2

Show the result of inserting 2, 1, 4, 5, 9, 3, 6, and 7 into an initially empty AVL tree.

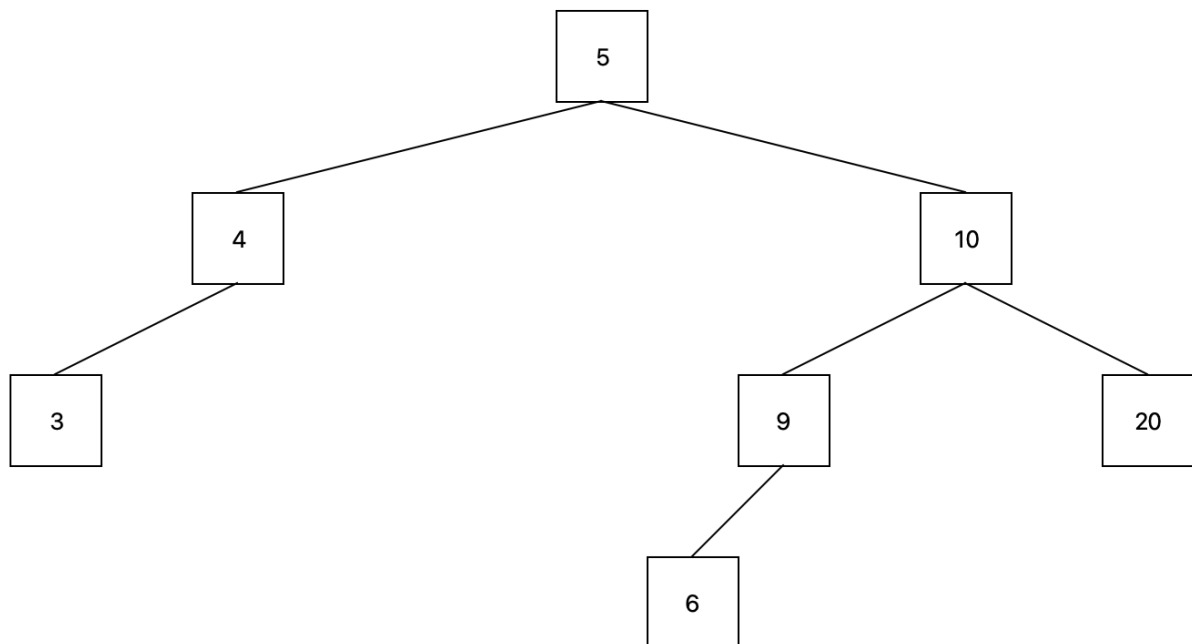
Solution 2



Question 3

Show the result of inserting 20, 10, 4, 5, 9, 3, 6, and 3 into an initially empty AVL tree.

Solution 3



Question 4

An AVL tree is created by inserting the following integer keys: 22, 27, 30, 9, 14, 24, 28, 4, 18, 15

1- Show the AVL tree just after the keys 9, 4, 15 are inserted into the AVL tree

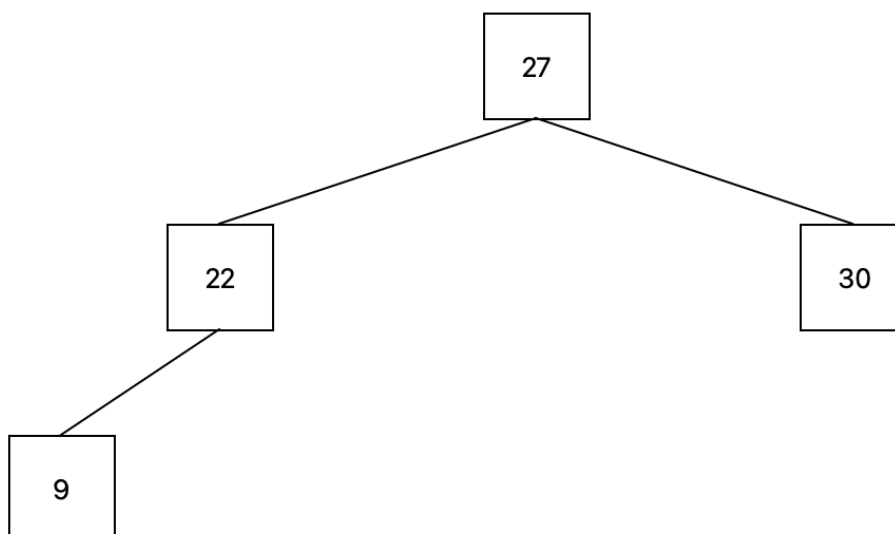
2- Show the AVL tree after delete Key 9.

3- Show the AVL tree after insert Key 10

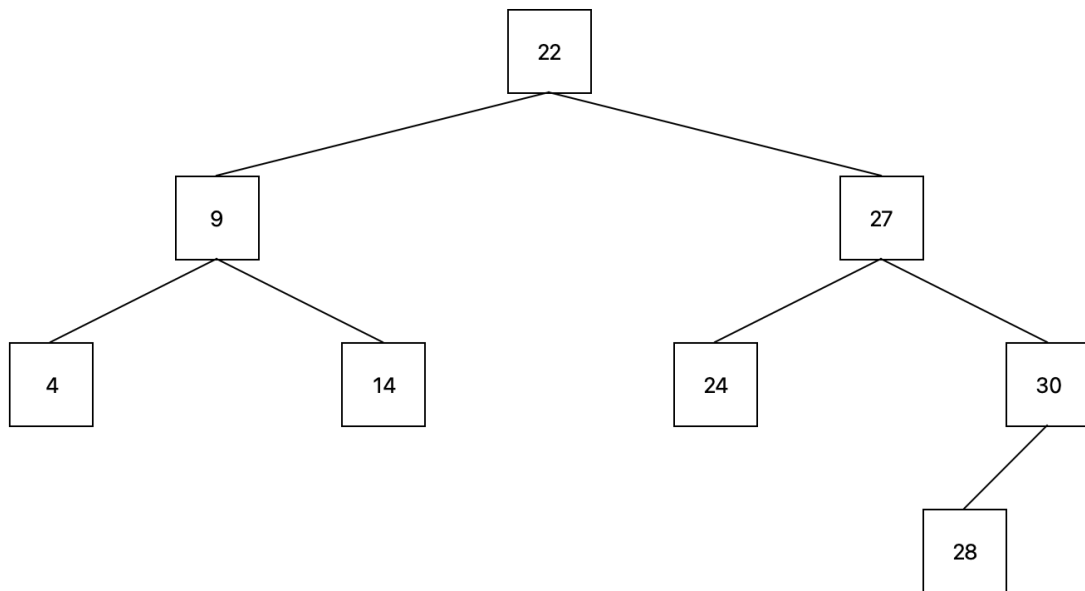
Solution 4

1- Show the AVL tree just after the keys 9, 4, 15 are inserted into the AVL tree

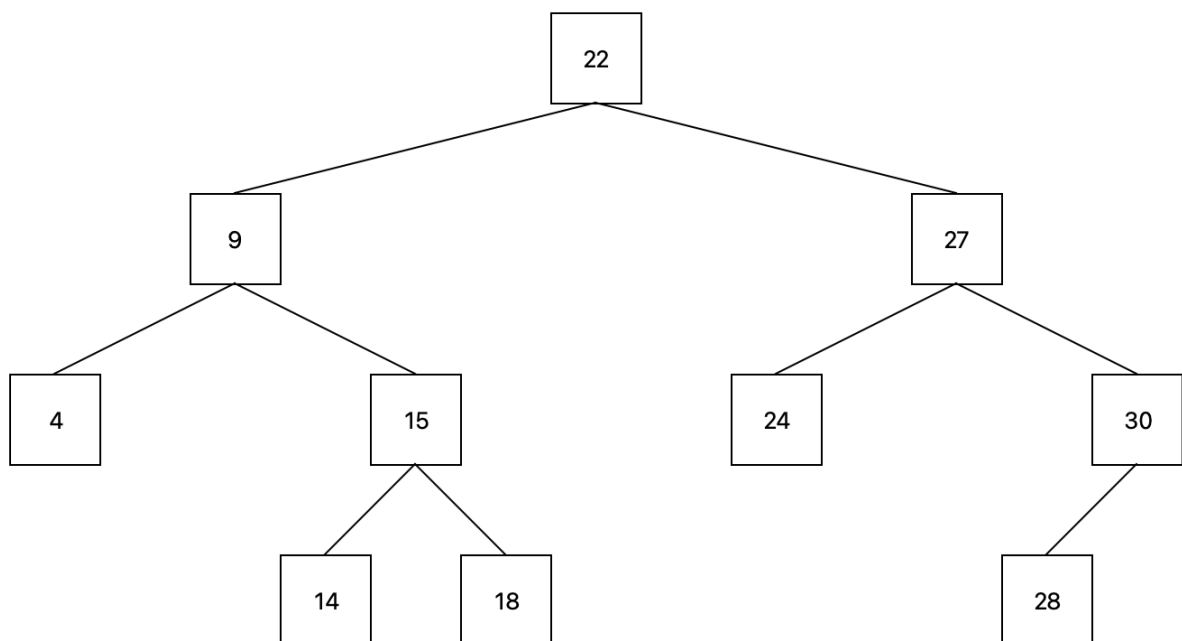
AVL Tree after the keys 9 is inserted



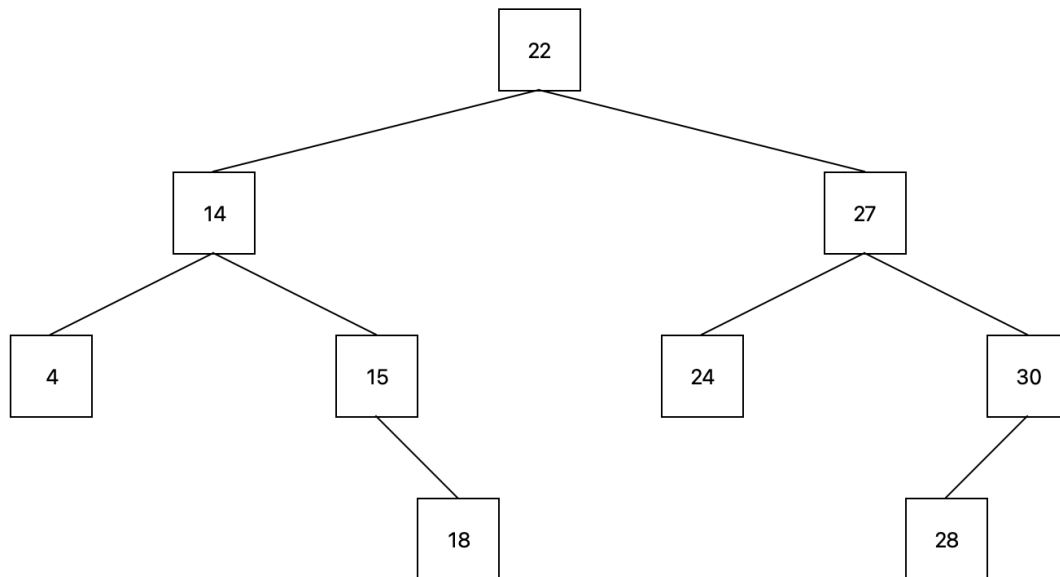
AVL Tree after the keys 4 is inserted



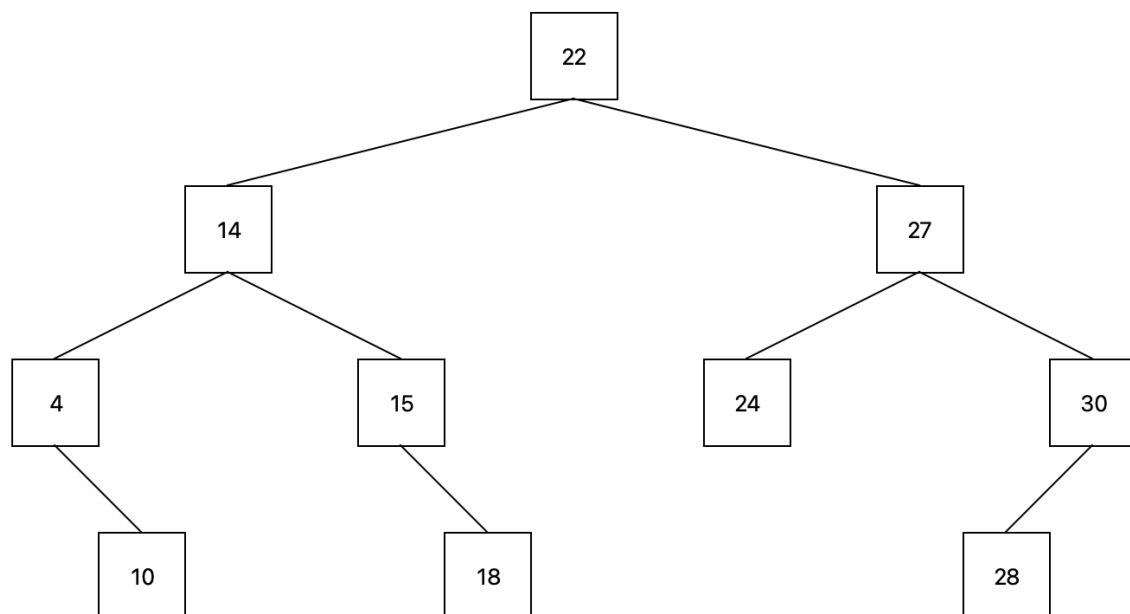
AVL Tree after the keys 15 is inserted



2- Show the AVL tree after delete Key 9.



3- Show the AVL tree after insert Key 10



Question 5

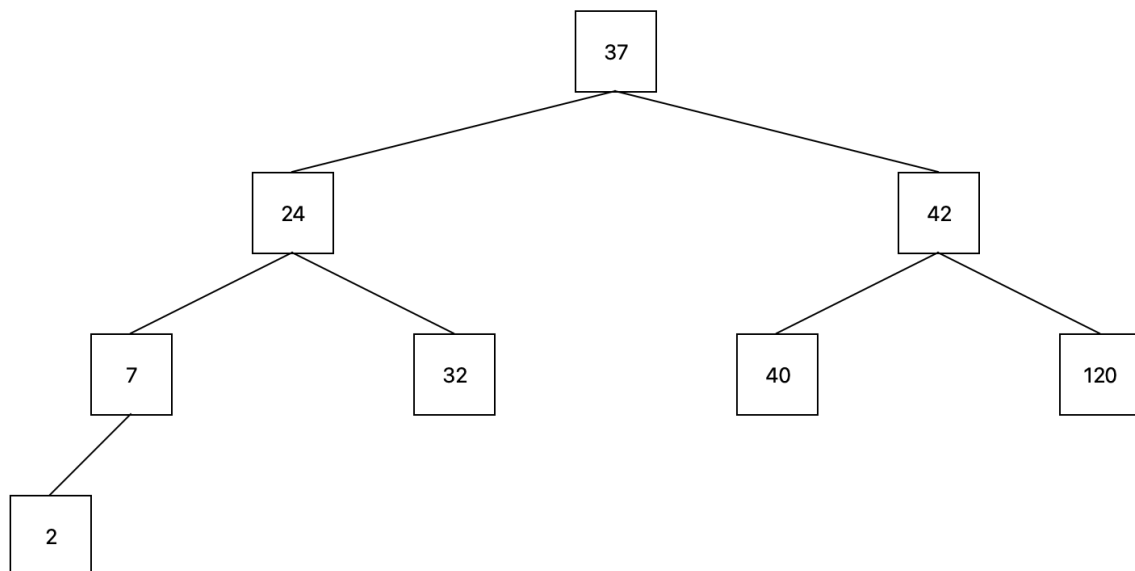
Two Binary Search Trees for a collection of values. Tree (a) results if values are inserted in the order 37, 24, 42, 7, 2, 40, 42, 32, and 120. Tree (b) results if the same values are inserted in the order 120, 42, 42, 7, 2, 32, 37, 24, and 40.

- 1- Draw each BST
- 2- Add 42, 7, 5, 10 into Tree(a)
- 3- Add 42, 7, 5, 10, 15 into Tree(b)
- 4- Delete key 40 from Tree(a)
- 5- Delete key 40 from Tree(b)
- 6- Draw AVL tree for both trees(a,b)

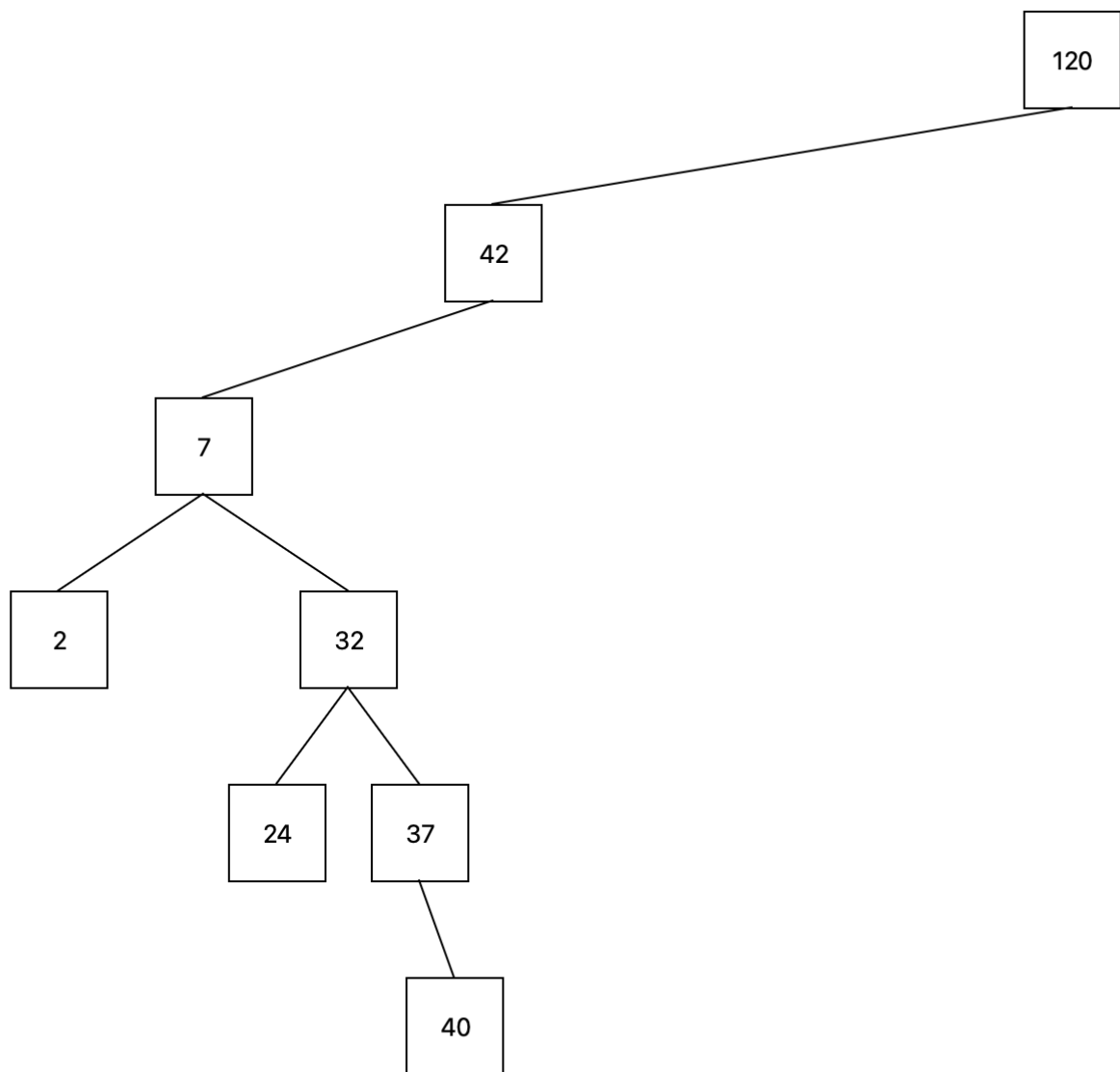
Solution 5

1- Draw each BST

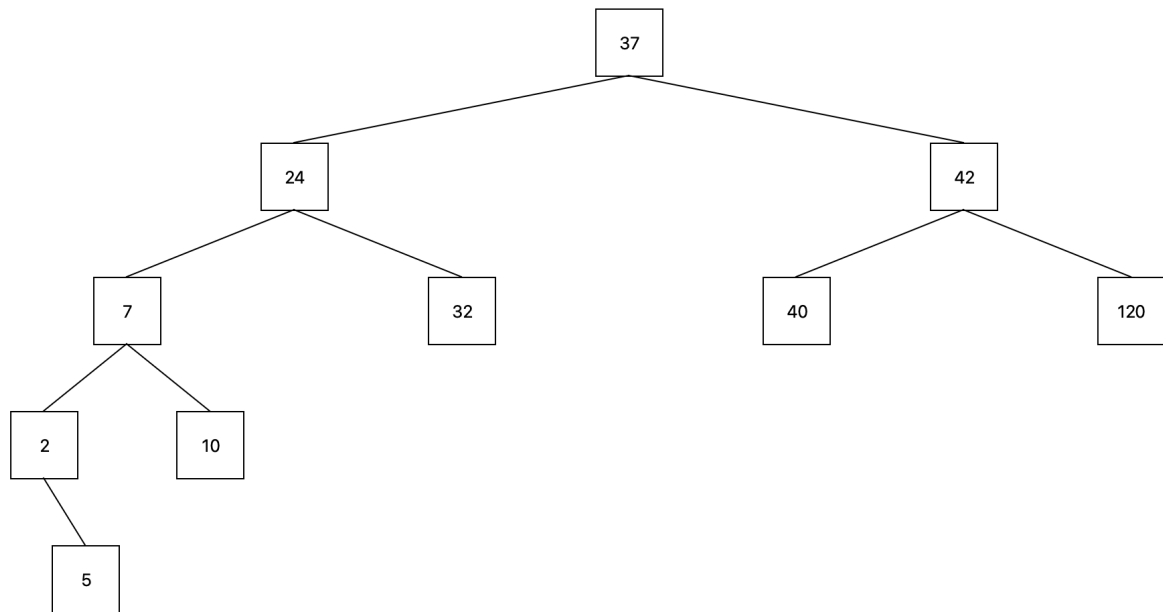
Tree (a)



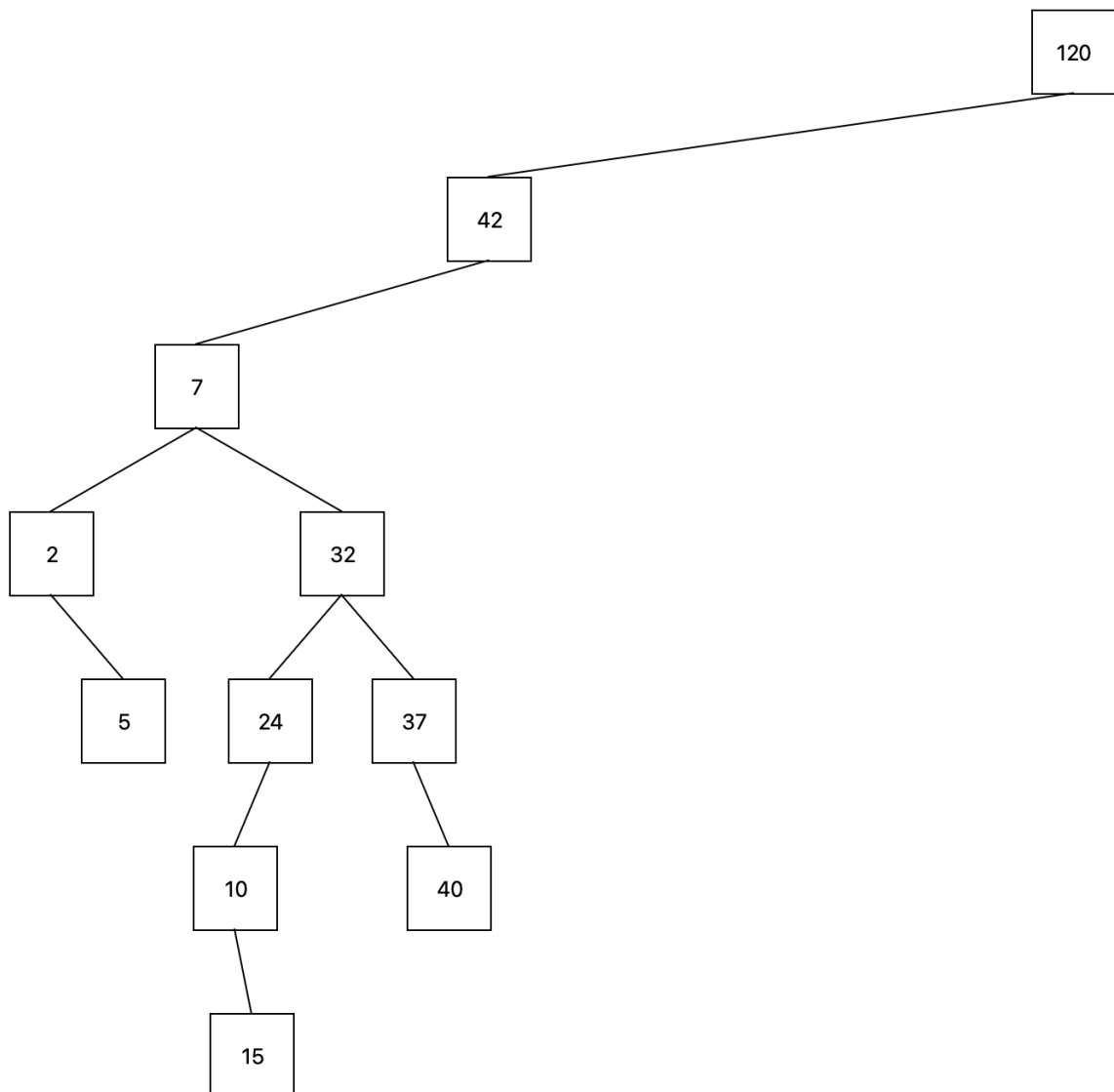
Tree (b)



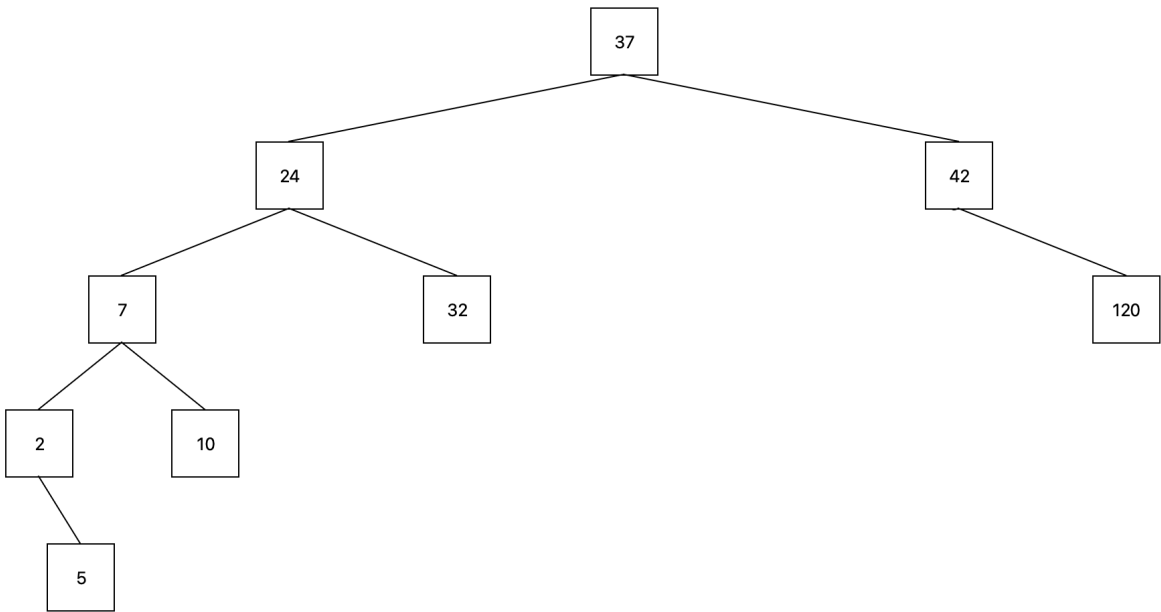
2- Add 42, 7, 5, 10 into Tree(a)



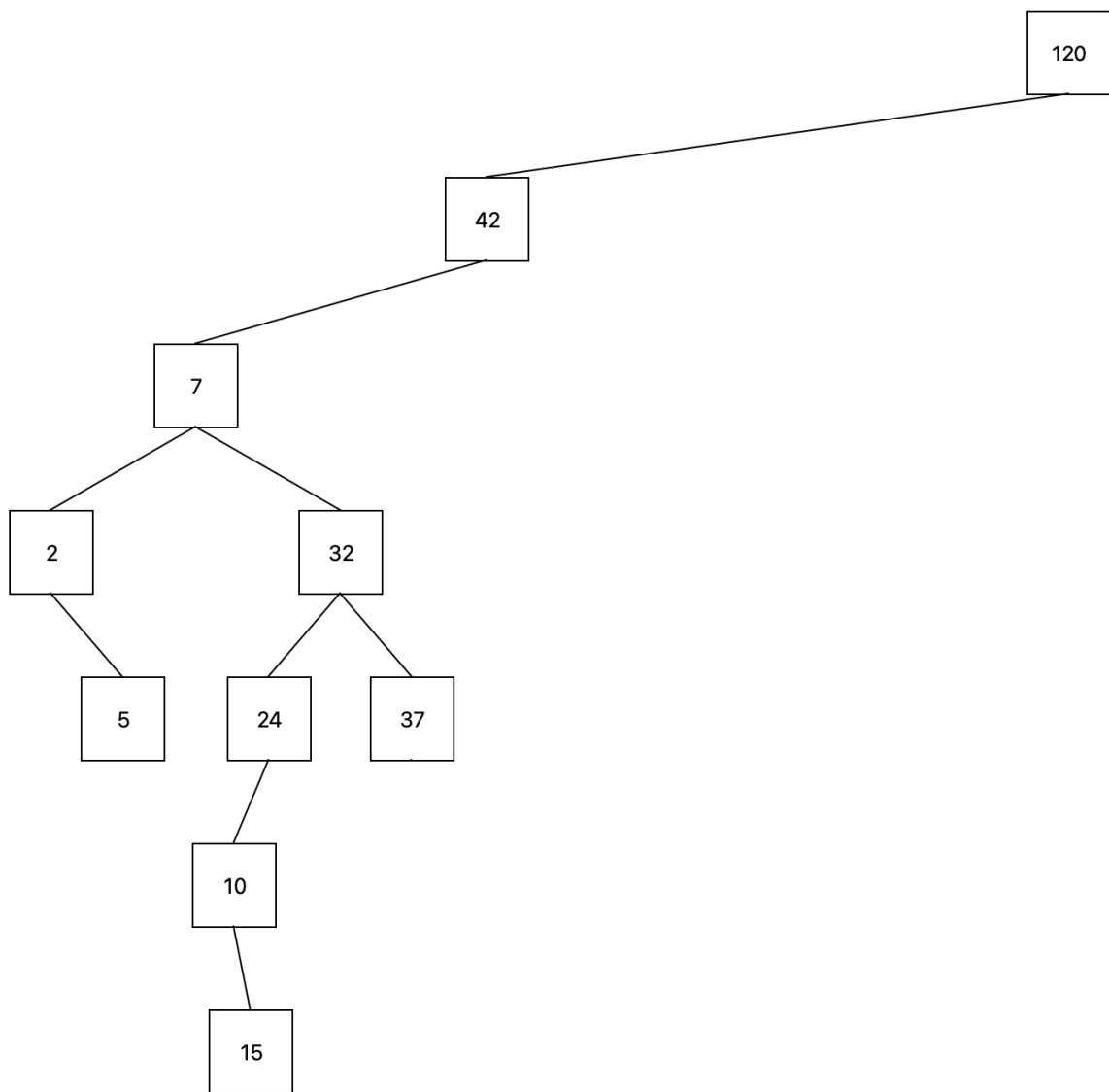
3- Add 42, 7, 5, 10, 15 into Tree(b)



4- Delete key 40 from Tree(a)

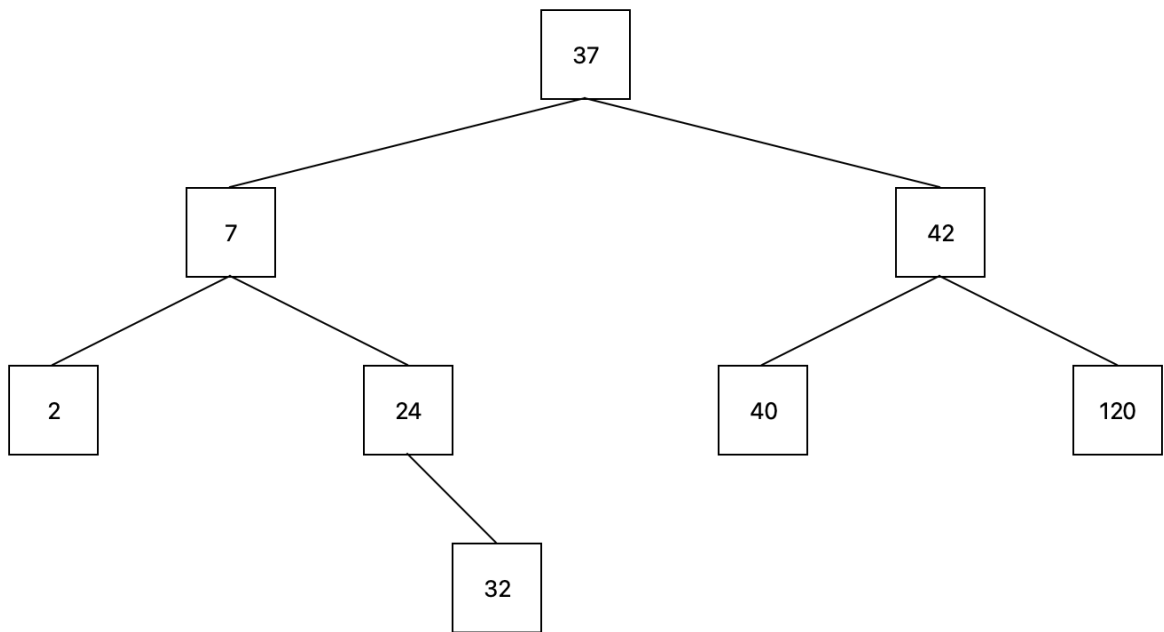


5- Delete key 40 from Tree(b)



6- Draw AVL tree for both trees(a,b)

AVL tree (a)



AVL tree (b)

