

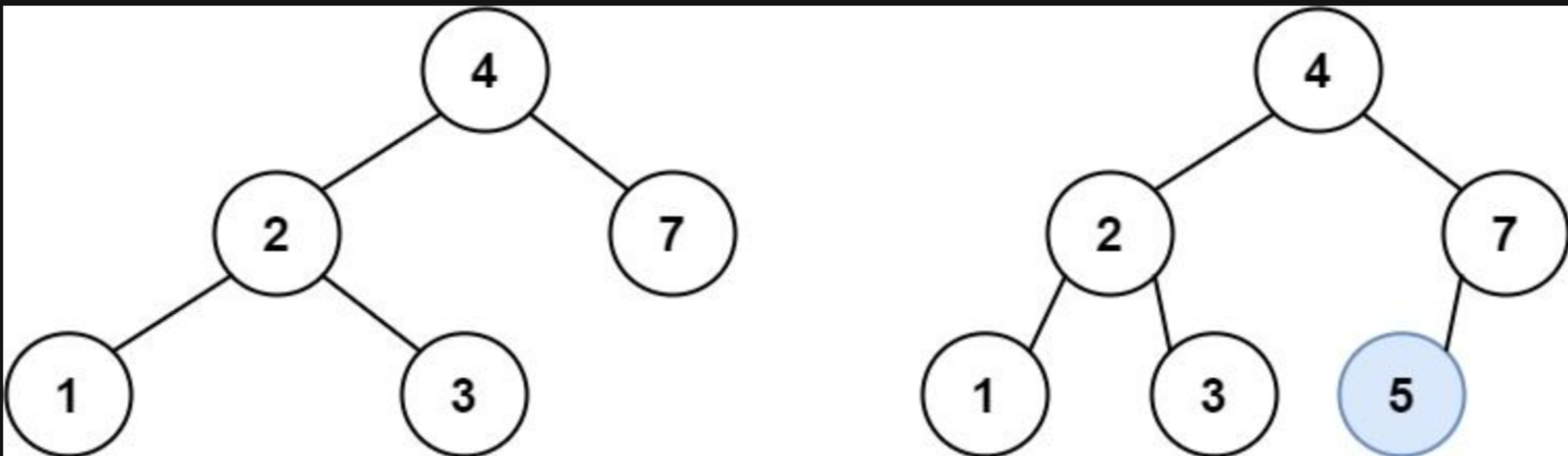
701. Insert into a Binary Search Tree

Description

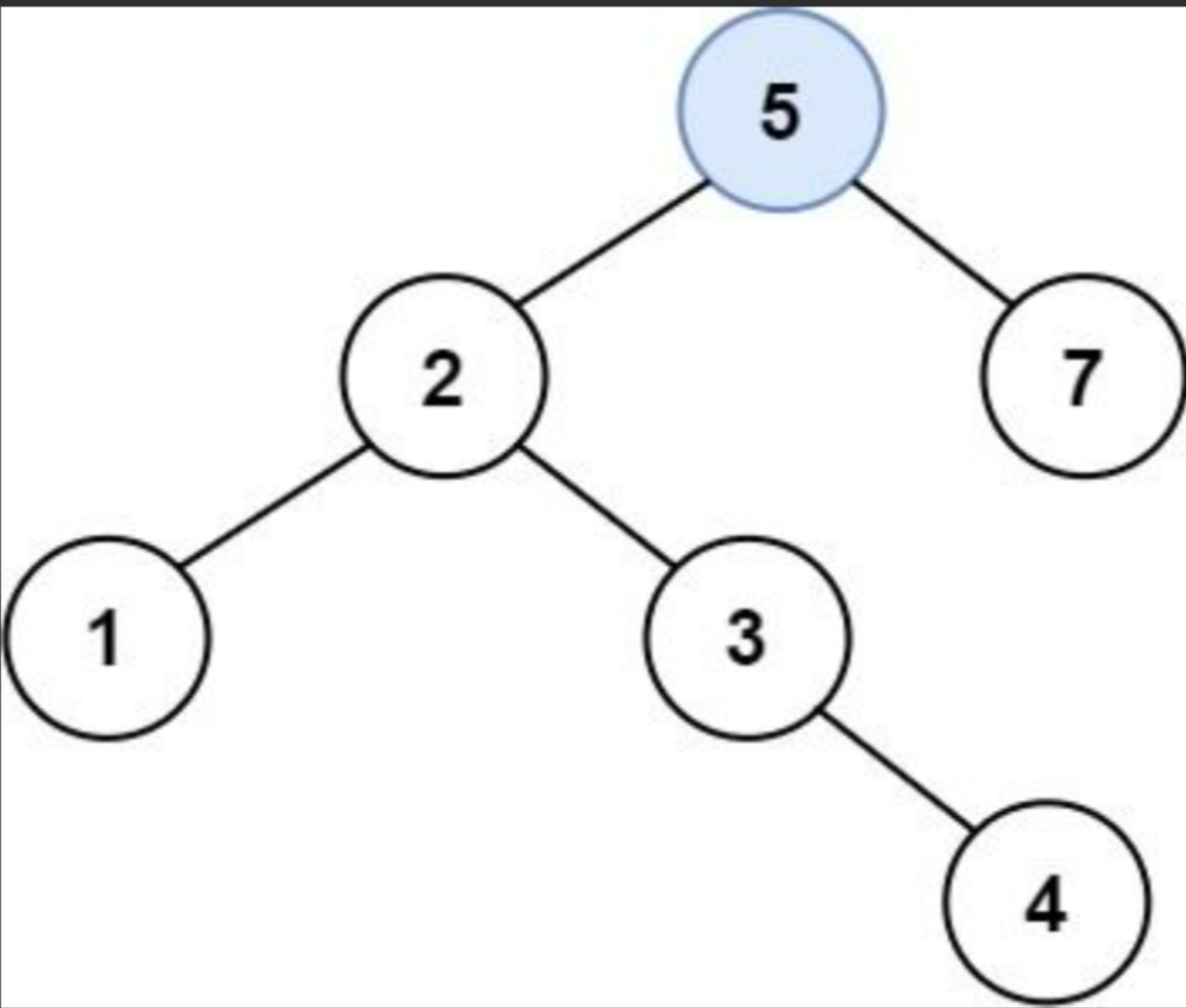
You are given the `root` node of a binary search tree (BST) and a `value` to insert into the tree. Return *the root node of the BST after the insertion* . It is **guaranteed** that the new value does not exist in the original BST.

Notice that there may exist multiple valid ways for the insertion, as long as the tree remains a BST after insertion. You can return **any of them** .

Example 1:



Input: `root = [4,2,7,1,3]`, `val = 5`
Output: `[4,2,7,1,3,5]`
Explanation: Another accepted tree is:



Example 2:

Input: `root = [40,20,60,10,30,50,70]`, `val = 25`
Output: `[40,20,60,10,30,50,70,null,null,25]`

Example 3:

Input: `root = [4,2,7,1,3,null,null,null,null,null,null]`, `val = 5`
Output: `[4,2,7,1,3,5]`

Constraints:

- The number of nodes in the tree will be in the range `[0, 104]` .
- `-108 <= Node.val <= 108`
- All the values `Node.val` are **unique** .
- `-108 <= val <= 108`
- It's **guaranteed** that `val` does not exist in the original BST.

