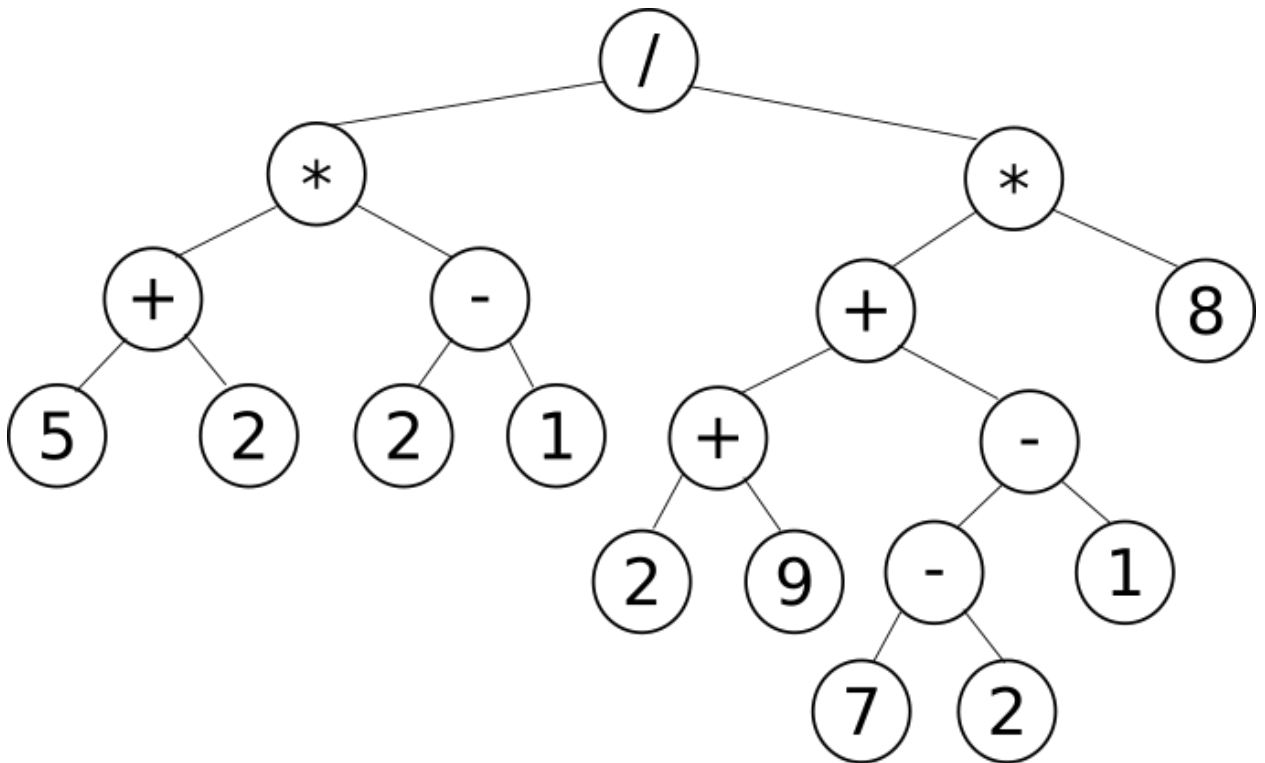


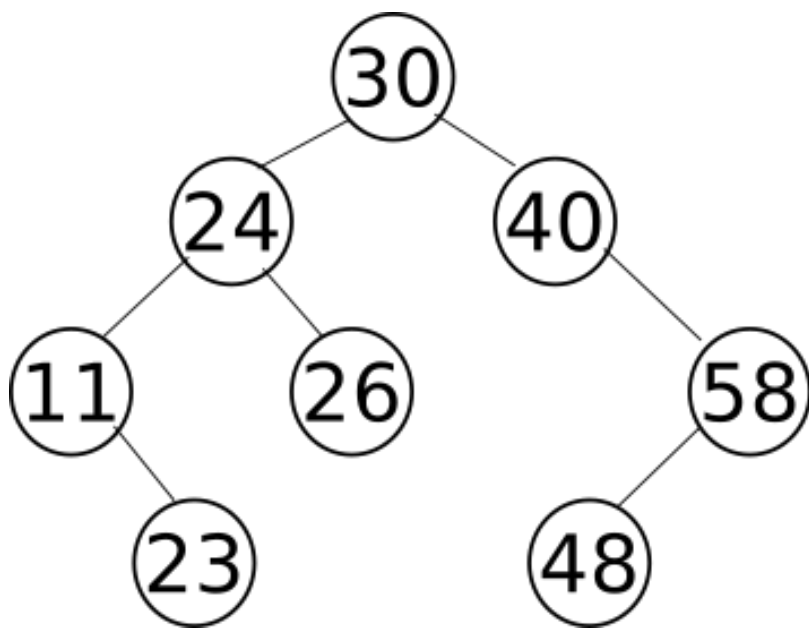
Homework 3

```
1. def CountLeaves(T):  
    if T is None:  
        return 0  
    elif T.left is None and T.right is None:  
        return 1  
    else:  
        return CountLeaves(T.left) + CountLeaves(T.right)
```



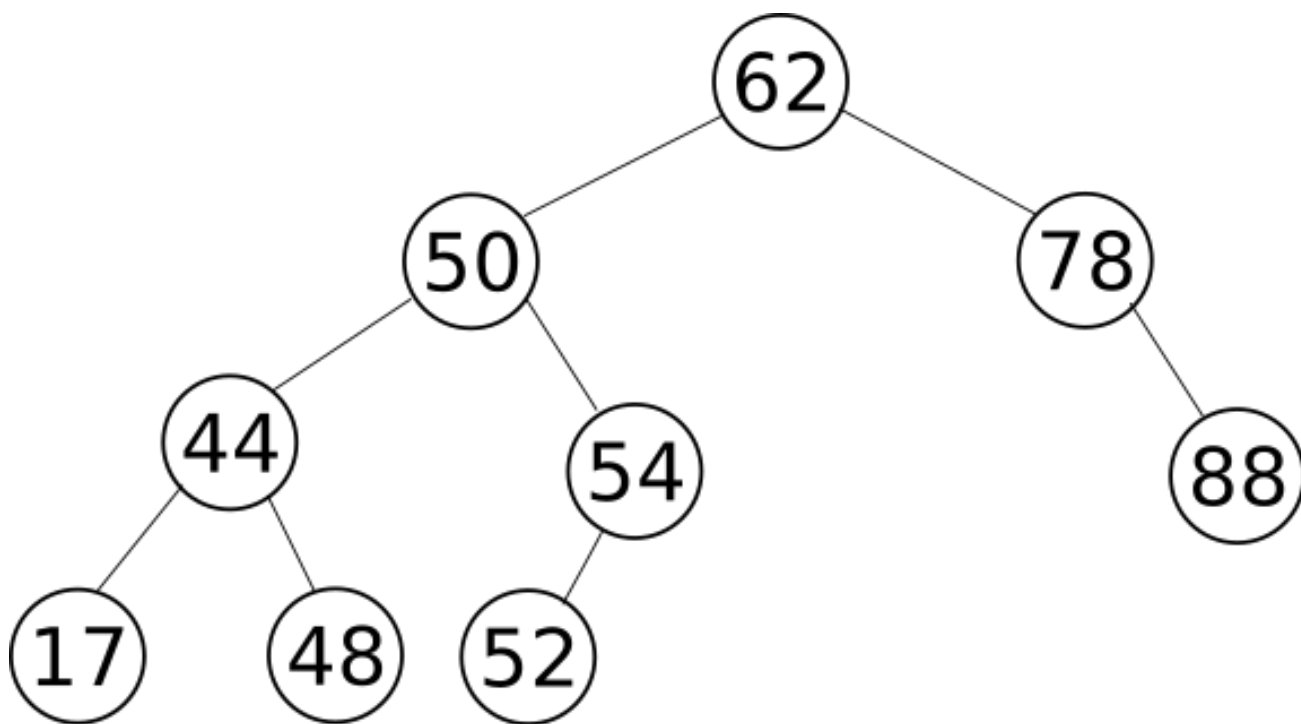
2.

3. $52+21-29+72-1+8^*/$

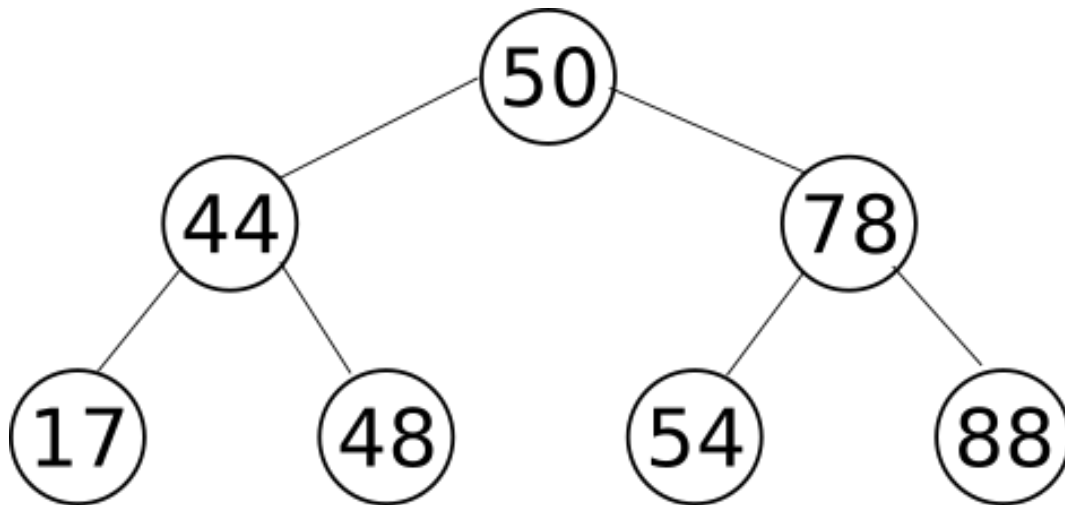


4.

5. 5. 2 with root 1, 1 with root 2, and 2 with root 3.



6.



- 7.
8.
 - (a) This is true. The number of nodes from a node to its leaves doesn't change when you only look at the subtree.
 - (b) This is true. If the node was black, there would be more black nodes along any path through it than through its empty sibling.
9. The inorder traversal of a binary search tree always begins with the smallest item, then the next smallest, and so on, outputting the items in sorted order. If two binary search trees contain the same set of items, they must be visited in the same order, regardless of the structure of the tree.
10. It looks like a line graph.

