

Ch. 2 & Exercises

3a.

n levels

$$\text{max nodes} = 2^n - 1 \text{ nodes}$$

15 nodes would be:

$$2^n - 1 = 15$$

$$2^n = 16$$

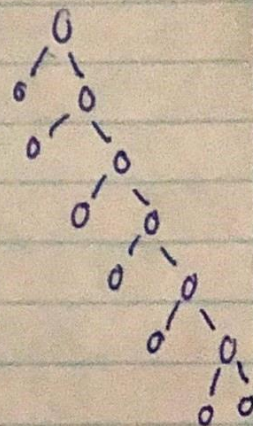
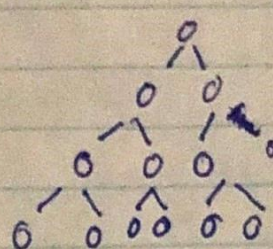
$n = 4 = 4$ levels would be bushiest

$$\text{max leaves} = 2 \cdot n$$

3b. smallest # of nodes = 1

greatest = 7

leaf nodes



levels has to be less than
of nodes + 1

4. No Induction on test

5. \nearrow

7. public int sumTree (TreeNode root) {

int sum = 0;

~~sum += root.val;~~

if (root.getRight() && root.getLeft() == null) {

sum += root.val;

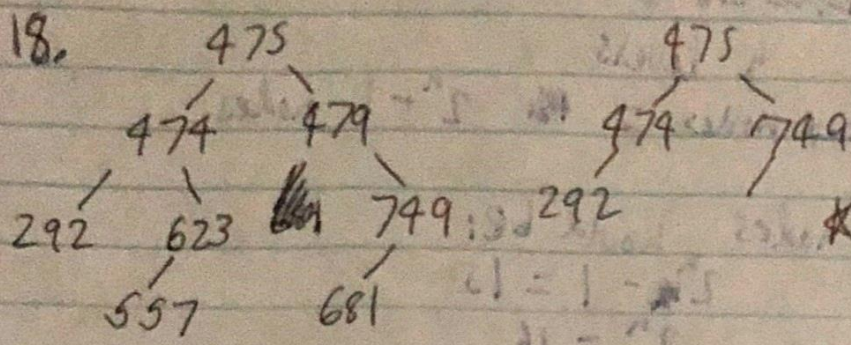
~~return sum;~~

else {

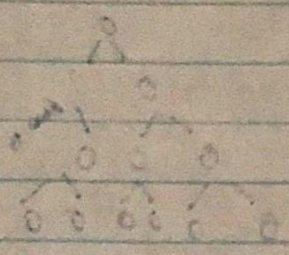
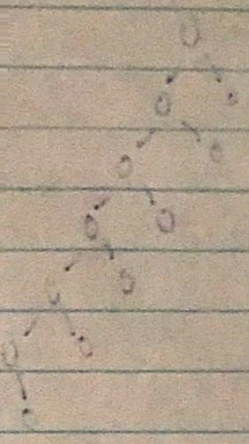
sumTree(root.getLeft());

sumTree(root.getRight());

} return sum;



* start at top
and work way
down *



11.5 - level 2

I = when 90 # balance
T = test
when 201

not at 221 of 100 level
- If 201

test no restriction on test
2

public int sum (TreeNode root)
{
if (root == null)
return 0;

return (root.val + sum(root.left) + sum(root.right));
}

return (root.val + sum(root.left) + sum(root.right));
}