

/*Given a binary tree and a sum, determine if the tree has a root-to-leaf path such that adding up all the values along the path equals the given sum.

For example: Given the below binary tree and sum = 22,

```

  5
 / \
4   8
/   / \
11  13  4
/ \   \
7  2   1

```

return true, as there exist a root-to-leaf path 5->4->11->2 which sum is 22.*/

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- 思想：
- (1) 比较简单，根据节点有几个儿子划分几种情况，进行自递归

```

public boolean hasPathSum(TreeNode root, int sum) {

    if (root == null) {
        return false;
    }

    return hasPathSumHelper(root, sum);
}

private boolean hasPathSumHelper(TreeNode root, int sum) {

    if (root.left == null && root.right == null) {
        return root.val == sum;
    } else if (root.left == null && root.right != null) {
        return hasPathSumHelper(root.right, sum - root.val);
    } else if (root.left != null && root.right == null) {
        return hasPathSumHelper(root.left, sum - root.val);
    } else {
        return hasPathSumHelper(root.left, sum - root.val)
            || hasPathSumHelper(root.right, sum - root.val);
    }
}

```