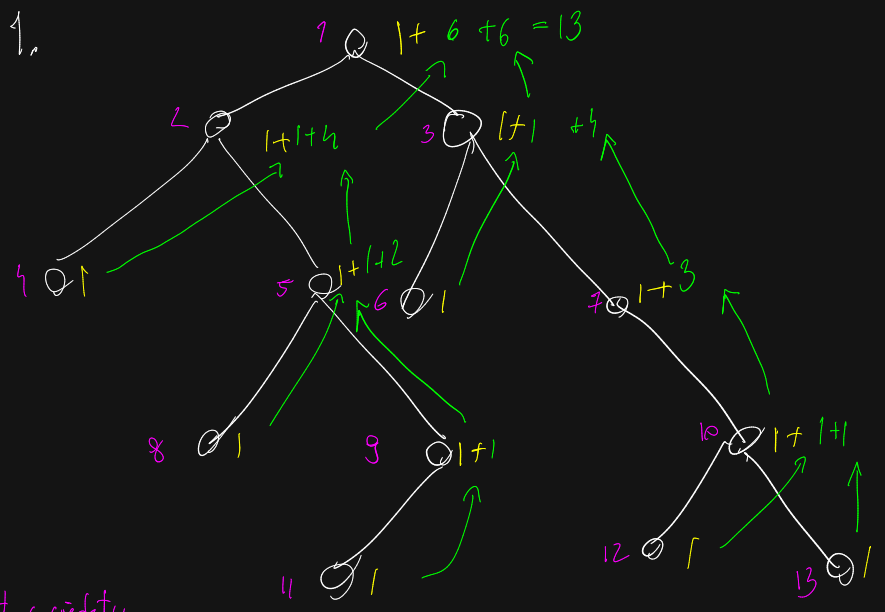
1.



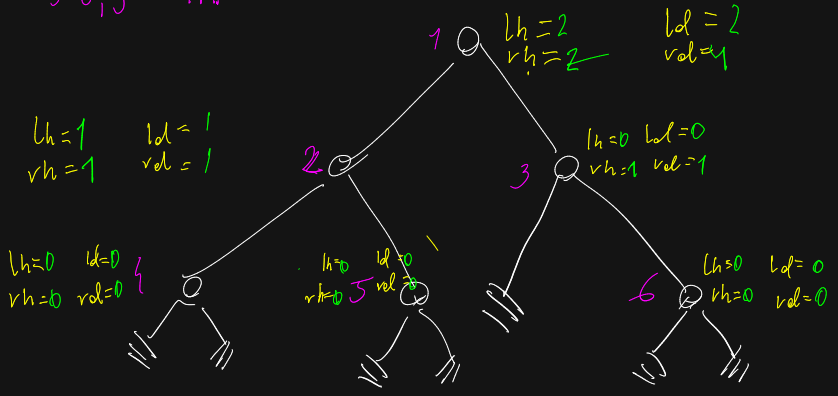
Lista sąsiedztwa

1: 2, 3
2: 4, 5
3: 6, 7
4: —
5: 8, 9
6: —
7: 10
8: —
9: 11
10: 12, 13
11: —
12: —
13: —

```
def isLeaf(v):
    if size(v.neighbours) == 0:
        return true
    return false
```

```
def countVerticesRec(T, v):
    if isLeaf(v):
        return 1
    sum = 0
    for n in v.neighbours:
        sum += countVerticesRec(T, n)
    return 1 + sum
```

treeDiameter = max(4, 2) = 5




```
def max(a, b):
    if a < b:
        return b
    return a
```

```
def findTreeDiameter(T, root, *height):
    leftHeight = 0
    rightHeight = 0
    leftDiameter = 0
    rightDiameter = 0

    if (root == NULL):
        *height = 0
        return 0

    leftDiameter = findTreeDiameter(root.left, leftHeight)
    rightDiameter = findTreeDiameter(root.right, rightHeight)

    *height = max(leftHeight, rightHeight) + 1
    return max(leftHeight + rightHeight + 1,
               max(leftDiameter, rightDiameter))
```