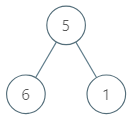
Given the root of a binary tree, find the maximum average value of any subtree of that tree.

(A subtree of a tree is any node of that tree plus all its descendants. The average value of a tree is the sum of its values, divided by the number of nodes.)

**Example 1:**



**Input:** [5,6,1]

**Output:** 6.00000

**Explanation:**

For the node with value = 5 we have an average of (5 + 6 + 1) / 3 = 4.

For the node with value = 6 we have an average of 6 / 1 = 6.

For the node with value = 1 we have an average of 1 / 1 = 1.

So the answer is 6 which is the maximum.

**Note:**

1. The number of nodes in the tree is between 1 and 5000.
2. Each node will have a value between 0 and 100000.
3. Answers will be accepted as correct if they are within 10^-5 of the correct answer.