Data Structures and Algorithms

A strictly binary tree is a binary tree in which every node that is not a leaf has two children. Suppose that for a strictly binary tree there exists $c > 1$ such that the ratio of the lengths of any two root-to-leaf paths is no greater than $c$.

For a tree of height $h$, derive the upper and lower bounds on $N$, the number of nodes in the tree. 

Suppose instead that every node that is not a leaf has $n$ children. What then would be the upper and lower bounds?