

$$T(n) = 4T(n/2 + 2) + n$$

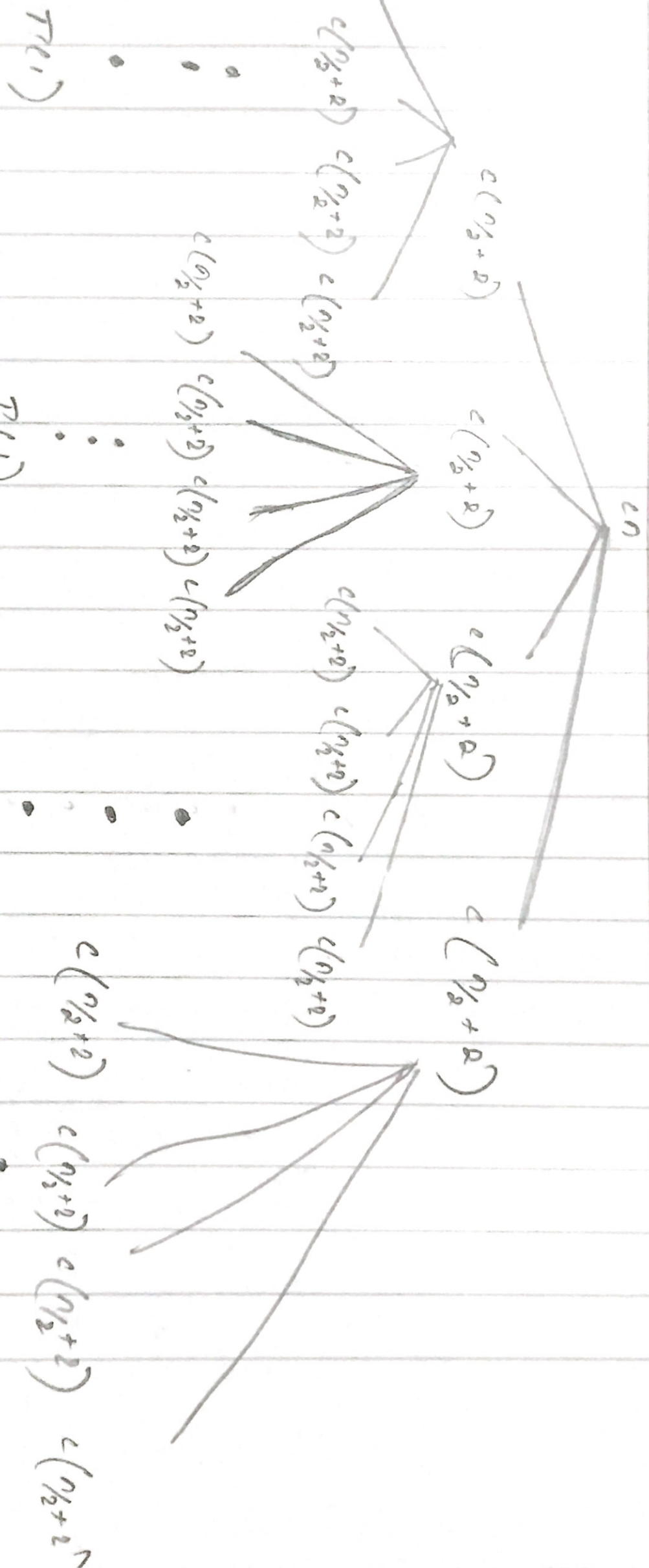
Level # Nodes

0 1

1 4

2

$$\frac{64}{2} + 2$$



Note: Tree is Balanced.

Sub-problem at each level:  $(n/2 + 2)$  [except first node]

# of nodes = 4<sup>i</sup>



Now cost of node at each level.

level  $\rightarrow$   $\textcircled{0}$   $Cn$

"  $\rightarrow$   $\textcircled{1}$   $C 4^i \left( \frac{n}{2} + 2 \right)$

height of the tree: