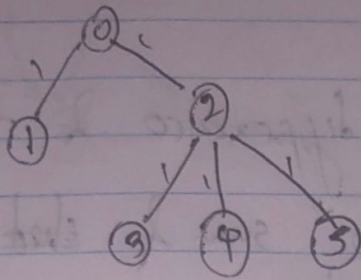


## \* Sum of Distances in Tree



$$0 \rightarrow 1+1+2+2+2=8$$

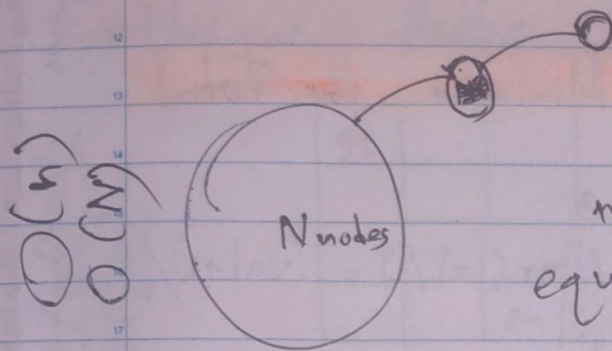
$$1 \rightarrow 1+2+3+3+3=12$$

$$2 \rightarrow 2+1+1+1+1=6$$

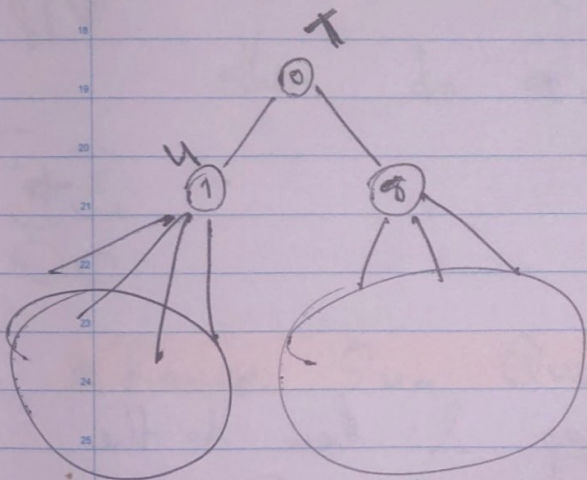
$$3 \rightarrow 3+1+2+2+2=10$$

$$4 \rightarrow 3+2+2+2+2=14$$

$$5 \rightarrow 3+2+1+2+2=10$$



when  $n$  nodes add to another node, total # of new lines get added is  $n$ ; equals to ~~total~~ total nodes.



$u$  - value at 0

$$V = T - u + (N - u)$$

node count below 1 with

Node count below 0 with 0.