

Tree Quiz

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BSCPE2-2

6. {13, 6, 60}
7. {7}
8. Node 23 has no siblings
9. Nodes {4, 12, 7, 22} are ancestors of node 9
10. Nodes {13, 6, 60, 23, 21} are descendants of node 16
11. Nodes {23, 6, 21, 20, 9, 1} are leaves
12. Nodes {22, 16, 7, 13, 60, 12, 5} are non-leaves
13. Depth of node 4 is 3
14. Degree of the tree is 3
15. Height of the tree is 4
16. Weight of the tree is 6
17. No, it is a triary tree
18. No, because some nodes only have one degree like nodes {13, 60, 4}
19. No, same reason as no.19
20. No, because a full binary tree can have different heights for each subtree.
21. Yes
22. n^h leaves, if $n=3$ and $h=4$ then leaves would be 81
23. The height would be $\log_n m$.
24. $(n^h-1)/(n-1)$, if $n=3$ and $h=4$ then internal nodes would be 40
25. $[(n^h-1)/(n-1)] + n^h$, if $n=3$ and $h=4$ then total number of nodes would be 121. If it were a complete binary tree with $h=3$ then total no. of nodes would be 15.