

1. Name the three properties of a tree
- **Rooted, Free, Acyclic**
2. Is a tree forest?
- **Yes**
3. What do you call the special designated node in a tree?
- **Root**
4. What is the minimum number of nodes in a tree?
- **One**
5. Can a tree have no subtrees at all?
- **Yes**
6. Children of node 16
- **13, 6, 60**
7. Parent of node 1
- **7**
8. Sibling of 23
- **None**
9. Ancestors of 9
- **4, 12, 7, 22**
10. Descendants of 16
- **13, 6, 60, 23, 21**
11. Leaves
- **23, 21, 20, 9, 1**
12. Non- Leaves
- **13, 16, 60, 12, 4, 7, 22**
13. Depth of node 4
- **Depth: 3**
14. Degree of the tree
- **Degree: 3**
15. Height of the tree
- **Height: 4**
16. Weight of the tree
- **Weight: 6**
17. Is the tree a binary tree?
- **No**
18. Removing 6, is the tree a full binary tree?
- **No**
19. Removing 6, is the tree a complete binary tree?
- **No**
20. Is a full binary tree complete?
- **No**
21. Is a complete binary tree full?
- **Yes**
22. How many leaves does a complete n-ary tree of height h have?
- **n^h**
23. What is the height of a complete n -ary tree with m leaves?
- **$\log_n m$**
24. What is the number of internal nodes of complete n-ary tree of height h?
- **$\frac{n^h - 1}{n - 1}$**
25. What is the total number of nodes of a complete n-ary tree of height h have?
- **$n^h - 1$**