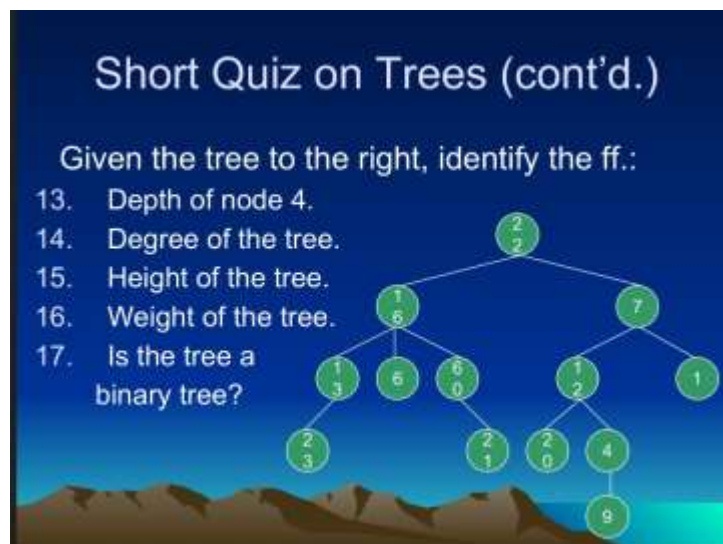


6. $V = \{13, 6, 60\}$
7. $V = \{7\}$
8. None
9. $V = \{22, 7, 12, 4\}$
10. $V = \{13, 6, 60, 23, 21\}$
11. $V = \{23, 6, 21, 20, 9, 1\}$
12. $V = \{22, 16, 7, 13, 60, 12, 4\}$



13. The depth of this tree is 3.
14. The degree of this tree is 3.
15. The height of this tree is 4.
16. The weight of this tree is 6.

Short Quiz on Trees (cont'd.)

Given the tree to the right, identify the ff.:

18. Removing 6, is the tree a full binary tree?
19. Removing 6, is the tree a complete binary tree?
20. Is a full binary tree complete?



18. No, because node 4 only has one child, which is node 9.
19. Yes, because every other node is completely filled.
20. No, because a full binary tree can be defined as a binary tree in which all nodes have 0 or two children, whereas a complete binary tree is a binary tree in which all levels are completely filled except possibly the lowest one, so nodes with only one child node may exist.

Short Quiz on Trees (cont'd.)

Given the tree to the right, identify the ff.:

21. Is a complete binary tree full?
22. How many leaves does a complete n -ary tree of height h have?
23. What is the height of a complete n -ary tree with m leaves?
24. What is the number of internal nodes of a complete n -ary tree of height h ?
25. What is the total number of nodes a complete n -ary tree of height h have?

21. No, because a complete binary tree has all completely filled except possibly the lowest one so there might be nodes who have only one child node or zero.

22. n^h

23. $\log_n m$

$$24. 1 + n + n^2 + \dots + n^{h-1} = \sum_{i=0}^{h-1} n^i = \frac{n^h - 1}{n - 1} ; 2^h - 1$$

$$25. n = \frac{(k^{h+1}) - 1}{(h - 1)}$$