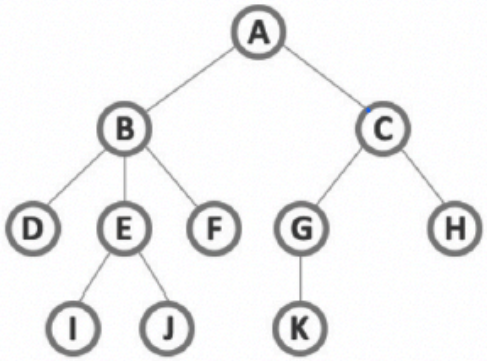
1 Please answer the following questions using the following tree.



a. The number of nodes is 11

b. The number of edges is 10

c. What is the height of the tree? 4

d. What is the height of node G? 2

e. What is the height of node K? 1

f. What is the depth of the tree? 4

g. What is the depth of node C? 2

h. What is the depth of node J? 4

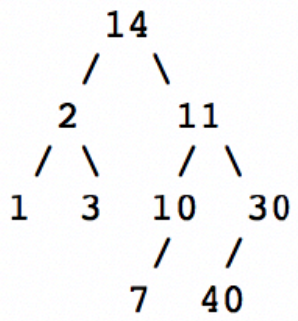
i. Path between A & J is A-B-E-J

j. is {E,I,J} sub-tree? YES

k. is {J, F, K} sub-tree? NO

l. is this a binary tree? NO

2 Please answer the following questions using the following tree.



a. Which one is the root? 14

b. How many leaves does it have? {1, 3, 7, 40}

c. What is the value stored in the parent node of the node containing 30?
11

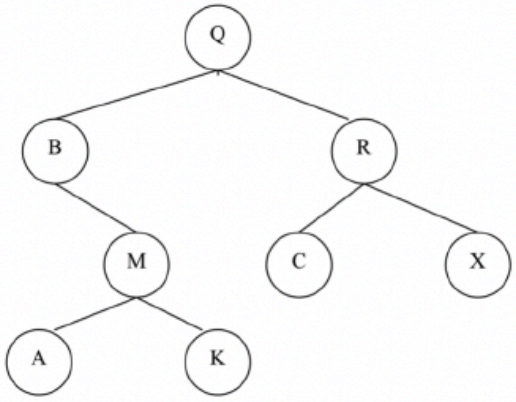
d. How many of the nodes have at least one sibling? 6

e. What is the depth of the tree? 4

f. What is the height of the node that contains 11? 3

g. How many children does the root have? 2

3



Root L R

L R Root

L Root R

a. Which node is the root of this tree? Q

b. Which nodes are the leaves of this tree? A, K, C, X

c. Write down the nodes in the order they are reached if we perform

→ a. Preorder: QBMAKRCX

b. Postorder: AKMBCXRQ

c. Inorder: BAMKQCRX

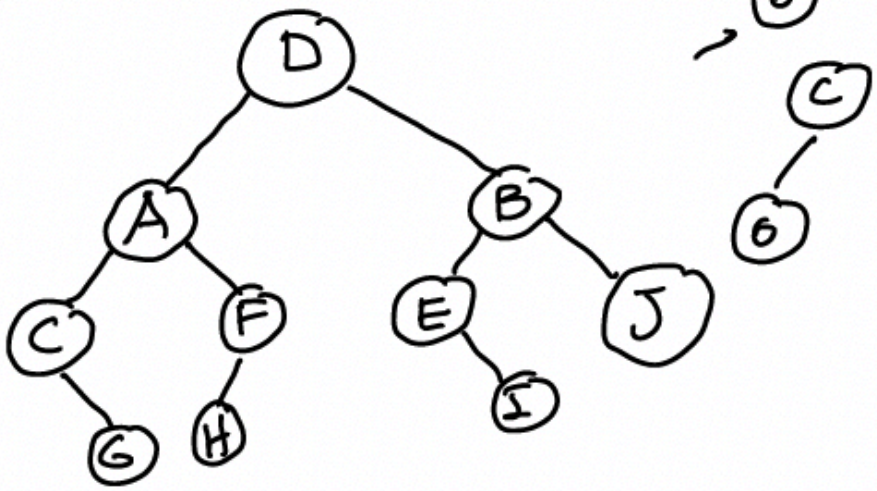
4. Assume that the *inorder* traversal of a **binary tree** is

C G A H F D E I B J

and its *postorder* traversal is

G C H F A I E J B D

Draw this **binary tree**.



3. Assume that the *inorder* traversal of a **binary tree** is

C G A H F D E I B J

and its *postorder* traversal is

G C H F A I E J B D

Draw this **binary tree**.