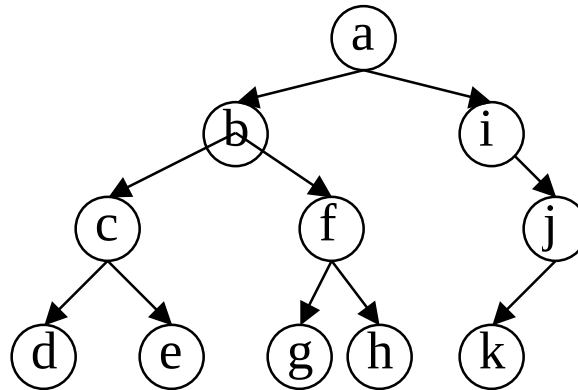


1. This question refers to the following binary tree.



- (a) Which node(s) are the root(s) of the tree? **a**
- (b) Which node(s) are the leaf(s) of the tree? **d, e, g, h, k**
- (c) Which node(s) are ancestor(s) of node f? **a, b**
- (d) Which node(s) are the children of node b? **c, f**

2. The following data structure can be used to represent a binary tree node in C++:

```

struct BTreeNode {
    int item;
    BTreeNode *left;
    BTreeNode *right;
};

```

Complete the definition of the following function so it returns the number of nodes in the binary tree with root r.

```

// = number of nodes in the binary tree with root r
int CountNodes(BTreeNode *r) {

    if (r == NULL)
        return 0;

    return 1 + CountNodes(r->left) + CountNodes(r->right);

}

```