

**12** Write a pseudocode algorithm for inserting a node in a tree.

1. if the current node is NULL, set it to the new node
2. if the new node's value is less than the current node's value, insert the node into the left subtree.
3. if the new node's value is greater than the current node's value, insert the node into the right subtree.

**13** Write a pseudocode algorithm for the inorder traversal.

1. The current node's left subtree is traversed.
2. The current node's data is processed.
3. The current node's right subtree is traversed.

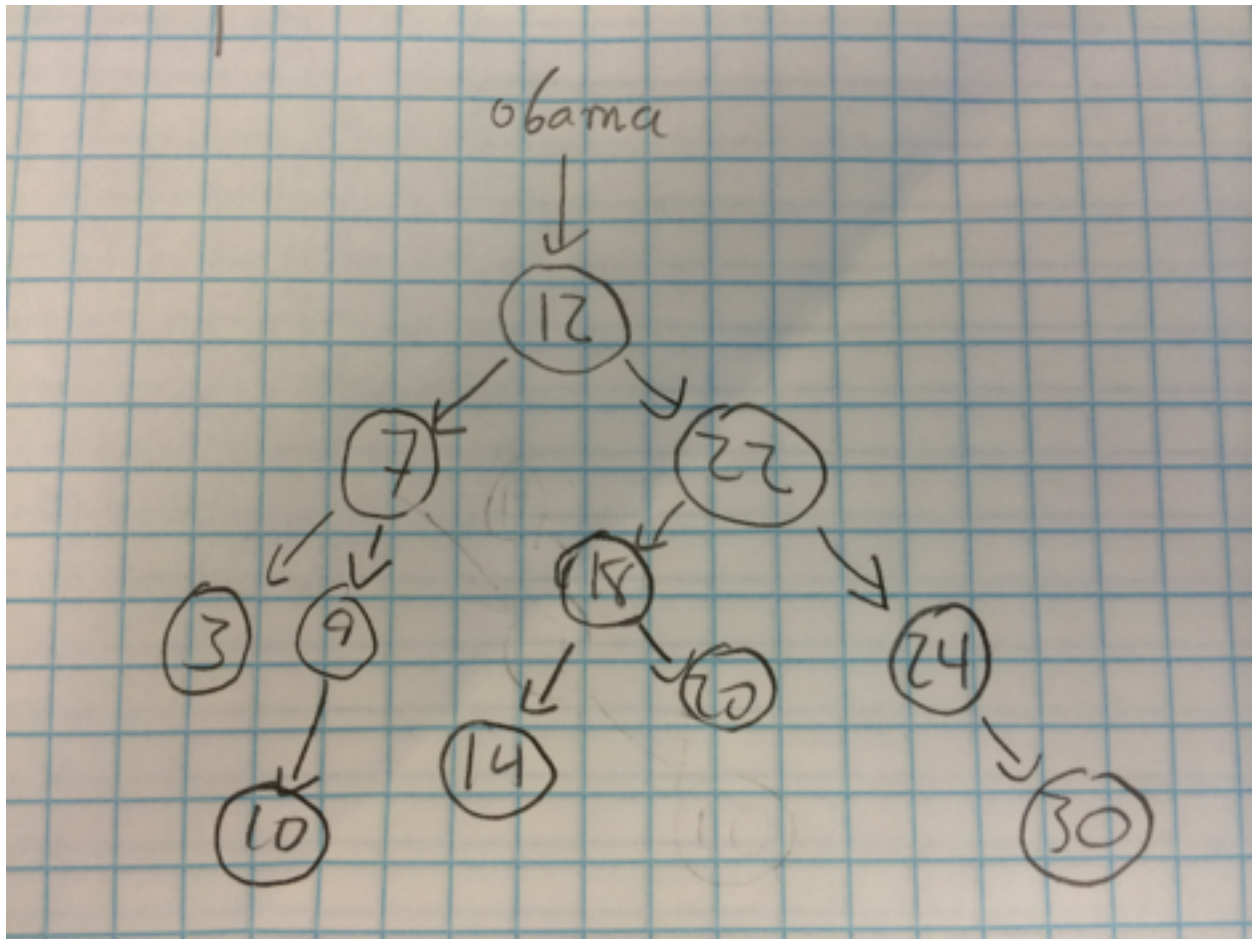
**17** Suppose the following values are inserted into a binary tree, in the order given:

12, 7, 9, 10, 22, 24, 30, 18, 3, 14, 20

Draw a diagram of the resulting binary tree.

(silly image clips to next page, товарищ).

(note that I omitted null terminators, and that the relationship between (9, 10) should be right-associative. needless to say, the art of drawing digraphs is not strong with me).



**18** How would the values in the tree you sketched for Question 17 be displayed in an inorder traversal?

3, 7, 9, 10, 12, 14, 18, 20, 22, 24, 30

**21** Each node in a binary tree must have at least two children.  
FALSE

**22** When a node is inserted into a tree, it must be inserted as a leaf node.  
TRUE

**23** Values stored in the current node's left subtree are less than the value stored in the current node.  
TRUE

**24** The shape of a binary tree is determined by the order in which values are inserted.  
TRUE

**25** In inorder traversal, the node's data is processed first, then the left and right nodes are visited.  
FALSE