CSE 12 spring 2014 Week 8 Review Quiz

Use self-paced polling to answer these questions with your clicker. In addition, circle your answers on this form and turn it in as a record of your answers in case there are any disputes about your answers.

1. True or False: HeapSort in-place (i.e. in a single array) has the same tightest Big-O worst-case running time as HeapSort using additional storage space (i.e. an extra array).
   A. True
   B. False

2. Consider the following code and the binary tree at right:
   ```java
   traversal(node) {
     if (node != null){
       traversal(node.left)
       traversal(node.right)
       print this node
     }
   }
   ```
   Which of the following represents the order the nodes are printed when we call `traversal` on the root node of this tree.
   A. D B E A F C G
   B. A B D E C F G
   C. A B C D E F G
   D. D E B F G C A
   E. G F E D C B A

3. Is this a Binary Search Tree?
   A. Yes
   B. No
4. Consider the following fragment of a BST contains (find) method:

// Return true if toFind is in the BST rooted at root,  
// false otherwise
boolean contains( BSTNode root, E toFind ) {
    if ( root == null ) return false;
    if ( toFind.compareTo( root.getElement() ) > 0 )
        return ______________________________;
    // more code here

What line of code should go in the blank?

A. false
B. true
C. contains( root.getLeftChild(), toFind )
D. contains( root.getRightChild(), toFind )
E. contains( root, toFind )

5. What is the worst case running time to find an element in an arbitrary Binary Search Tree, where h is the height of the tree and n is the number of elements in the tree?

A. O(log(n))
B. O(n)
C. O(h)
D. Both A and C
E. Both B and C