CS21, Swarthmore College, Spring 2007, Practice Quiz 7

1. Suppose we have a linked list where all the elements are stored in sorted order. Write a method insertInOrder(item) that inserts a new item into the linked list in sorted order.

2. Consider the recursive implementation of computing the Fibonacci numbers. Trace through the recursive calls for fib_rec(5) and show how many recursive function calls are made in total. Explain why this is bad and implement a solution of your choice that avoids excessive recursive calls.

3. Suppose our implementation of the binary tree did not explicitly maintain the self.size instance variable. Write an implementation of the method getSize() that computes the size of the binary tree by recursively visiting all nodes starting from the root.

4.	Describe an implementation of the method getMax() that returns the node in a binary tree with the largest key. Suppose that you are not allowed to modify any of the other methods. Can you come up with a different implementation if you are allowed to modifyinit and insert?