Question 1 (10 pts). Linked list traversal: Write a method public Item max() of the Bag class as implemented using linked lists on p. 155. Return the maximum-valued Item in the Bag, or a null reference if the Bag is empty. Assume your Items are Comparable, and use compareTo() to compare them within the max() method. (See pp. 246-7 and Piazza for discussion). To test your code, it is fine to just work with a Bag of Integers.

a.) Implement this method iteratively, by traversing the Bag with a loop.

b.) Implement this method recursively. Hint: you will need to implement a helper method private Item max (Node<Item> c) that returns the maximum valued item in the sublist starting at Node c.

Question 2 (10 pts). Reasoning about stacks and queues.

a.) Exercise 1.3.3 on p. 161.

b.) Exercise 1.3.13 on p. 163.

Question 3 (10 pts). Chapter 1, Exercise 1.3.42 on p. 170. Make sure that you create actual copies of the Items in the original stack, as opposed to creating aliases (copies of references).

Question 4 (10 pts). Chapter 1, Exercise 1.3.44 on p. 170. Some details have been left unspecified, but try to handle corner cases as gracefully as you can, like moving left 15 when the cursor is at position 5. Mimic the behavior of a real text editor when you have a choice, like deciding what the cursor should point to after a deletion.