CMSC 206: Data Structures
Final Exam Review

1. Write a ListIterator for either KWArrayList or SingleLinkedList. Write the public ListIterator<E> listIterator() method to construct and return one. Test your work using either JUnit or a main method.

2. What are the requirements on a list in order to use binary search effectively?

3. Build (on paper) a binary search tree of at least ten students in our class. Write down the pre-order, in-order, and post-order traversals of the tree.
   
   Is the tree complete? Is it perfect? What is its height?

4. Take the array \{4, 8, 2, 9, 1, 5\}. Draw every step of insertion sort (writing down the array fresh every time it changes).

5. Write a recursive method reverseDigits that reverses the order of digits in an integer. You will need an accumulating parameter that builds up the reversed digits as you recur. Here is the full description of the method:

   /**
    * Reverses the digits in n, appending the reversed digits to those in acc.
    * @param n The digits to reverse
    * @param acc The accumulating parameter; holds digits already reversed
    * @return The digits of acc concatenated with the reverse of the digits of n.
    */

   public static int reverseDigits(int n, int acc)