1) Do exercise R-6.9 on page 252. For a dequeue operation assume that the result is output to the terminal screen followed by a <CR><LF>. For this problem show:
   - what is output to the terminal window
   - the contents of the queue and where the head and tail pointers point after the enqueue(6) operation is performed
   - the contents of the queue and where the head and tail pointers point after the last operation is performed

2) Assume that you have a queue consisting of 5 nodes. The node structure is as follows:

   ```java
   class IntNode {
       private int datum;
       private IntNode next;
   }
   ```

   The front and back pointers have been declared using a statement of the form:

   ```java
   IntNode front;
   ```

   Write the Java statement(s) needed to dequeue an element from the queue and print it to the terminal screen. Make sure you test for emptiness before doing this operation.

3) Suppose a queue of integers is being implemented using an array with variables for front, back and size. (Note: size is used so that we do not have to leave a cell open.) Suppose the array has just 7 cells (numbered 0 through 6, of course) and that the following operations are performed on an initially empty queue.

   enqueue 29, enqueue 48, enqueue 14, enqueue 55
   dequeue an integer and print it
   enqueue 81, enqueue 34
   dequeue an integer and print it
   enqueue 70, enqueue 62, enqueue 99
   dequeue an integer and print it
   enqueue 25
   dequeue an integer and print it
   dequeue an integer and print it
   enqueue 47
   enqueue 18
   dequeue an integer and print it

   a) Will all the operations be possible? Or, will the queue start to overflow at some point?
To answer the next two parts, assume that if an attempt was made to enqueue an integer when the array was filled, the integer was discarded; that is, assume that the array was **not** enlarged.

b) List the integers printed by the operations above.

c) Draw a **picture** of the circular array after the above operations have all been performed. Show the position of the front and back variables and give the final value of the variable size.

**Submission information:**

This assignment is due at the start of class on Monday, September 14th. Submission to Canvas is required. **Note: Do not include this assignment sheet in the submission. Rather, start with a blank word processor document and enter the solutions into it.**