CS0455 ALGORITHMS AND INFO STRUCTURES

Assignment 6

All the question below relate to the problem of writing pseudocode to copy all the entries in a Queue called **myQueue** into a List called **myList** in reverse order. You can only use the usual methods for queues and lists.

1.   Write the pseudocode that will implement the following algorithm:

- Starting from the front of **myQueue**, take off each successive item and push it onto a stack
- Pop each successive item from the stack and put it at the end of the **myList**

2.   Explain what is wrong with the pseudocode below:

```
while !(myQueue.isEmpty())
        nextElement = myQueue.dequeue()
        myList.add(nextElement)
```

3.   Write the pseudocode that will implement the following algorithm:

- Successively dequeue each element of **myQueue** and place it at the front of **myList**

4.   Explain what is wrong with the pseudocode below:

```
while !(myQueue.isEmpty())
      myList.add(myQueue.dequeue())
for (i = 1 to numberOfEntries)
      myList.replace(i, myList.getEntry(numberOfEntries + 1 - i))
```

5.   Decide whether the pseudocode below will solve the problem. Justify your answer.

```
// myDeque is an empty Deque
while !(myQueue.isEmpty())
      myDeque.addToFront(myQueue.dequeue())
while !(myDeque.isEmpty())
      myList.add(myDeque.removeFront())
```