Lab 16: Queues

Instructions: In this assignment, complete the LinkedQueue and CircularArrayQueue implementations. Namely ensure dequeue, peek, isEmpty, and size methods are implemented as defined in the Queue<T> interface.

```java
package csu.csci325;

public interface Queue<T> {
    /**
     * Adds one element to the rear of this queue.
     * @param element the element to be added to the rear of the queue
     */
    public void enqueue(T element);
    // Calls enqueue(element);
    public void add(T element);
    /**
     * Removes and returns the element at the front of this queue.
     * @return the element at the front of the queue
     */
    public T dequeue();
    // Calls remove()
    public T remove();
    /**
     * Returns without removing the element at the front of this queue.
     * @return the first element in the queue
     */
    public T first();
    /**
     * Returns true if this queue contains no elements.
     * @return true if this queue is empty
     */
    public boolean isEmpty();
    /**
     * Returns the number of elements in this queue.
     * @return the integer representation of the size of the queue
     */
    public int size();
    /**
     * Returns a string representation of this queue.
     * @return the string representation of the queue
     */
    public String toString();
}
```

Write some test cases:

Create some test cases that you believe would cover all aspects of your code. You may write manual tests or use JUnit.

How to turn in:
Turn in via GitHub. Ensure the file(s) are in your lab16 directory and push via IntelliJ (VCS ↑) OR use the command line:

- $ git add <files>
- $ git commit
- $ git push

Due Date: November 17, 2015 2359

Teamwork: No teamwork, your work must be your own.